

L BEKEMANS

AN ASSESSMENT OF THE RATIONAL ACTOR MODEL
IN INTERNATIONAL COOPERATION. SMALL STATES AS
AID DONORS.

Being a Doctoral Dissertation Prepared and Presented at
the European University Institute

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Do not infest your mind with beating on
The strangeness of this business ; at pick'd leisure
Which shall be shortly single, I'll resolve you,
Which to you shall seem probable, of every
These happened accidents ; till then be cheerful,
And think of each thing well.
Come hither, spirit.

(William Shakespeare, The Tempest, Act V , Scene 1)

PREFACE

In the course of this study I have benefited from the advice and encouragement of several people without whom I would not have written this study. I am grateful to Professor Pierre Salmon, my supervisor, for his valuable comments on the original draft and for his constructive suggestions for further improvements. The interchange of ideas and information has been very useful.

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Finally, I thank my parents. Indeed, without the benefit of their silent help and encouragement I would not have finished this long-lasting endeavour.

Brugge, December 1980

Léonce Bekemans

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INTRODUCTION

1. Purpose of the Research

Explanation is considered a fundamental task in social sciences. Often conceptual frameworks are used to achieve this task and consequently, to stimulate progress in fundamental knowledge. The International Relations scholars have sometimes tried to capture the basic features of the discipline into models or tried to relate a specific problem to a scientific research program.

Although the core of any social science can be easily extracted, its scope and organization are often less distinctive. The literature on International Relations has never been dominated by any general consensus concerning the dimensions of the subject or the appropriate mode of analysis. The specific nature of International Relations, i.e., the study of actors and activities affecting the behaviour of the units into which the international system is divided, makes a scientific analysis in this discipline not an easy task. Studies in International Relations often focus on historical explanations of the individual behaviour of actors and/or activities within the international system, which only imply modest analytical evaluation. Although the explanation of single facts is a rather important task in this field, it does not always spill over into the more analytical framework of study. Therefore, in order to add some rigour to the study of International Relations, models from other social sciences have been introduced.

Often it has been assumed that a theoretical simplification can prove to be productive in scientific analysis : this can also be said for analysis in International Relations. By concentrating on relations between nation-states, some scholars have clearly hoped to be able to develop a model of International Relations that would capture the basic features of the discipline. The example of econo-

mics has been influential in encouraging such ambitions. Even when theoretical goals of International Relations' scholars can neither be as explicit nor as ambitious as those of economists, an analysis of International Relations in these terms is sometimes believed to be a necessary and entirely legitimate simplification of the reality.

We acknowledge the fact that there are serious problems in any transfer of analytical tools and modes of reasoning, developed within one discipline, to another discipline. One is often likely to overlook some crucial features or peculiarities of the new field which make basic concepts rather less applicable. Nevertheless, economic reasoning has already significantly contributed to the understanding of non-economic processes.

In the terrain of International Relations economists have also transferred concepts and modes of analysis originally elaborated for the purpose of understanding economics. The extension of the neo-classical research program to the area of International Relations has proved to be a promising path of analysis in some instances. The basic conceptual structure that will be applied in the present study, is the Rational Actor Model. This model has often illuminated some relevant variables in the interaction among states.

Central to our study is the assessment of the capability of the Rational Actor Approach to International Relations. This is a broad topic and coverage of the present analysis can only be selective. We are only interested in the subsection of International Relations that deals with the behaviour of nation-states towards international cooperation. Henceforth, the whole analysis on power relations among countries, in which the study of conflict constitutes a crucial aspect, does not form part of the present work. Here, we will only investigate to what extent the Rational Actor Approach can be useful and successful in explaining the behaviour of states towards international cooperation.

In recent years there has been an increasing interest in the possibility of developing formal theories of political behaviour in which the main properties of political systems are derived from assumptions about the behavioural characteristics of individuals, much as micro-economic theory attempts to infer propositions about markets from similar assumptions. In particular, the public choice theory has appeared to be an extension of the neo-classical research program to the subject of political science. Our present research must then be framed within the attempts to stimulate scientific analysis in International Relations with the help of the neo-classical research program.

The public choice theory, which can be defined as the economic study of nonmarket decision-making, or, simply the application of economics to political science, has certainly given a more scientific turn to the Rational Actor approach. Its basic behavioural postulate, as for economics, is decision-making by individuals who maximize their utility function under constraints, i.e., rational decision-making by individuals. A public choice analysis may vary from positive to normative formulation, from pure theory to applications, from highly mathematical analysis to descriptive analysis. More and more scholars take public choice considerations as the basis of a conceptual framework for analyzing issues in political science. Briefly, in many instances the public choice theory is assumed to be valuable as a help to systematic thought.

In the present study we only deal with that part of public choice theory which concentrates on the possible biases in the operation of the collective decision-making process, i.e., the problems which may result from the pursuit of individual rationality in a group. One possible basis for such a theory is the economists' concept of public goods. In fact, it has been the basis for an important body of economic literature on the function of the state. A substantial set of principles has been developed that has proved to be of interest to economists and others concerned with the analysis

of public policy. It will be indicated that the existence of public goods may lead to problems of collective action in a system of decentralized decision-making. Within the general framework of the neo-classical research program we will thus adopt a public goods perspective to our analysis of the behaviour of states towards international cooperation.

More specifically, we will take Mancur Olson's public goods theory as the main reference for our own analysis. Olson argues that many organizations provide public goods to their members. However, following most of the economic literature, he also argues that the ability of governments to supply such goods is based on their ability to tax. The main focus of the theory of collective action is on the conditions under which individuals or groups, often joined in voluntary organizations, can coordinate their actions to achieve common benefits or can overcome the difficulty of raising resources voluntarily. This provokes the question about how non-governmental organizations can provide public goods successfully. The conclusions all center around the relation between group-size and the actual provision of the public good and on the cost-sharing within the small-sized group.

We know that the economic theory of public goods has already been extended to the subject of International Relations. Here, our main interest is in the application of Olson's special interest group theory to international organizations. The similarities between international organizations and special interest groups make this theory amenable to application to International Relations. By transposing the assumptions that guide the actions of individuals to the analysis of the interplay of states, Olson and others have shown that the problems of collective action among nation-states are exactly the same as in the case of individuals. The extension of this part of public choice theory to the analysis of the problems of collective action in International Relations has already thrown

new light on some problems of alliances, labour unions or world organizations in general. It may also prove relevant when thinking about the realization of common interests in the international system.

For our last part of this study we will assess the relevance and the successfulness of the Rational Actor Approach and the public goods perspective to the analysis of the behaviour of states towards development cooperation. Focus will be on the applicability of economic theory to the analysis of the aid performance by a number of donor countries within a specific organization. According to this approach, the relationship between the size of a donor and the aid performance is a crucial one in the analysis of the behaviour of states towards development cooperation.

The conclusions will point to some of the problems inherent to scientific studies in International Relations in general, as well as to some of the problems in a transfer of analytical tools and modes of reasoning from economics to International Relations. Although the Rational Actor assumptions have proven to be fruitful in some standard models and theories in economic science as well as in political science, peculiarities in International Relations can make them sometimes less illuminating than one is inclined to think.

2. Scope and Organization of the Research

Having described the purpose of the research, we will now present its scope and practical organization. In the first part (Chapter I and II) we will introduce those parts of the theory of International Relations which will be taken as the main points of reference and comparison for the introduction of the economic theory into the discipline of International Relations. In spite of the relativity of any model in International Relations, it will be argued that a conceptual framework can prove useful. The first chapter will deal more specifically with some of these conceptual frameworks. Although many theoretical structures have been proposed to analyze International Relations, discussion will be limited to a presentation of two overarching frameworks, i.e., the classical model and the complex interdependence model. Because the two models apply to differing situations, scopes or domains of behaviour, they will be considered as complementing each other. A combination of both models may provide the conceptual framework for analyzing issues in International Relations. Then it will depend on the focus of the specific research subject which model is to be preferred as the basic structure.

In the second section of the first chapter we present the specific model that we will employ in our research. The main assumptions of the Rational Actor Approach will be explained. Reference will also be made to the possible relaxations of the Rational Actor Model as to the content of the utility function as well as to the concept of rationality. For the purpose of our own research this neo-classical research program will be transposed outside economics to the field of International Relations. We will also transpose individual rationality to collective rationality, in the sense of a consistency of choice of nation-states within constraints.

According to the Rational Actor Model, 'size' is believed to be a major explanatory source of the foreign policy of a nation-state. Therefore, in Chapter II we will try to situate our analysis in the wider framework of the study of small states in International Relations. The concise summary of the existing literature on small states will indicate the little relevance of most classification schemes to the study of the behaviour of states towards international cooperation. Most of these studies are rooted in the analysis of power relations among states, i.e., an important section of international relations which does not form part of our present study. Moreover, the literature will also indicate the lack of a theoretically defined term, 'small state', similar to the economic concept of the small state as a price-taker in the international market. It will be argued that Keohane's theoretical definition of the small state as a 'system-taker' can be conceived as the only useful concept in the present study.

Whereas the first part announces the subject from an International Relations' perspective, the second part introduces the application of economics to International Relations. The second part (Chapter III-IV-V) deals with the actual presentation and subsequent elaboration of the economic theory of collective action and with the relevance of this economic theory to International Relations. I will engage in an enterprise of transferring and applying the basic conceptual structure of the Rational Actor Model to International Relations. We will introduce a public goods theory in order to explain the behaviour of states towards international cooperation when a public good is produced. Because the introduction of this public goods model will indicate some failures of decentralized decision-making, it may also illuminate possible problems of collective action among states.

In Chapter III we present Olson's economic theory of groups and organizations. The similarity of the assumptions of no coercion and non-exclusion of Olson's special interest group theory and the context of the international system makes the application of such a theory a promising path for research. One of the main conclusions of Olson's theory concerns the cost-sharing within small-sized groups. This has led Olson to the formulation of the hypothesis of the exploitation of the big countries by the small countries. His theory has been tested and validated at the level of International Relations for defence alliances. Some of the positive outcomes of the use of Olson's public goods theory to International Relations has stimulated us to search for further application. Moreover, it will become clear that few criticisms have actually damaged the core of Olson's theory. Olson's concern is for the consequences of independent provision of the public good, whereas many further developments have taken different frameworks, assuming in one way or another coercion, a taxing scheme or an overarching capacity.

The fourth chapter will provide some conceptual qualifications to Olson's theory of collective action. We will discuss some major aspects of the application of this theory to International Relations. First, we will try to clarify the concept of public good as it has been developed in economics. We will pay special attention to the introduction of the mixed public goods to the analysis. Secondly, we will explain the model of group behaviour in the presence of a public good on which Olson has based his theory, i.e., the noncooperative Cournot model of independent maximizing behaviour. Thirdly, we will elaborate on the relevance and usefulness of the public good concept to analyzing international cooperation. A suggestive fourfold classification of international goods is discussed, which is said to reveal a better indication of the relationship between international cooperation and the actual provision of an international good than the relationship Olson's theory assumes. It will be

argued that international arrangements may provide simultaneously goods with differing characteristics and that international goods may be dealt with in differing frameworks of cooperation.

In the last chapter of this purely theoretical part we will introduce two main theoretical qualifications to the analysis of problems of collective action in International Relations. First, we will argue that Olson's exploitation thesis can be qualified by the introduction of differential preferences of countries towards the consumption of a public good. This difference in preferences may result in a different burden-sharing of the production of the public good. To demonstrate this qualification we will discuss the equilibrium conditions for the public good output with the help of the reaction process model.

The second theoretical qualification widens the analysis of public goods in the area of International Relations by introducing a distinction between national and international arrangements to achieve a country's objective. The international cooperation model inspired by Ruggie is a joint production scheme. This will certainly add a more nuanced perspective of a country's behaviour towards international cooperation. Also in this model, size is believed to be an explanatory source of behaviour. Ruggie's main conclusion purports an inverse relationship between the ratio of sources spent on international arrangements over resources spent on national arrangements and the total level of resources used to attain a specific objective.

Concerning the behaviour of states, Olson bases his analysis on the consequences of the existence of an international public good, while Ruggie's analysis is centered on the impact of the returns to scale in the production of national and international arrangements in order to pursue an objective. Olson's public goods model as well as Ruggie's joint production scheme consider the size of a country as an important factor in explanation of a state's behaviour towards international cooperation. Both models will be tested in the area of development cooperation.

The last two chapters will deal more specifically with the Foreign Aid sector. International Development Aid is taken as that area in which the assumptions and tools of the Rational Actor Approach will be tested. In the sixth chapter we will describe the history of the Phenomenon of International Development Aid since WW II and will present some of the general characteristics of the aid performance by a specific donor group, i.e., the Development Assistance Committee.

The last and final chapter will make use of this descriptive analysis to assess the aid performance by the Development Assistance Committee for the period 1963-1977. This is done with reference to the assumptions and tools explained and elaborated in the previous chapters. An important section will be dedicated to a discussion of the nature of the international good of development aid. It will be clear that the objectives and means of the foreign aid allocation by donors contain simultaneously public and private good elements. It will be purported that from a conceptual standpoint an application of a public good model to the area of development aid poses a number of problems.

The empirical assessment of both Olson's public good model and Ruggie's joint production scheme for the period 1963-1977 will tend to indicate that the aid performance of the donor countries as regards the aid volume as well as the composition of the aid flows have changed over the period concerned. Size will tend to be less a determining explanatory factor in the behaviour of states towards international development cooperation.

In view of the results of the empirical tests the aid performance of the Development Assistance Committee will be re-assessed. Some reasons will be explored for the departure from the predicted outcomes of Olson's and Ruggie's models, as to the association between the size of a donor and the foreign aid behaviour. This final discussion will clearly reveal the difficulty of maintaining and testing simultaneously both models, i.e., the Rational Actor Approach and the public goods model for the area of development cooperation.

CHAPTER I ANALYSIS IN INTERNATIONAL RELATIONS : MODELS AND HYPOTHESES

Introduction

Science and the growth of science is said to start with problems and to be directed to problem-solving undertakings in order to obtain explanatory theories with, possibly, predictive behaviour (1). Such problems are to be analyzed from a conceptual framework which enables the analyst to relate a scientific problem to a paradigm (2).

Explanations by particular analysts often show regular and predictable characteristics, which reflect unrecognized assumptions about the character of puzzles, the categories in which problems should be considered, the types of evidence that are relevant and the determinants of occurrences. Bundles of such related assumptions constitute basic frames of reference or conceptual models. These largely implicit conceptual models have significant consequences for the content of the thought of the analysts.

Thus, because explanation is considered a fundamental task in social sciences, conceptual frameworks or models are seen as helpful analytical tools to achieve this task (3). Such models give

-
- (1) See, for instance, Kuhn, T., Logic of Discovery or Psychology of Research, in Lakatos, I. and Musgrave, A. (eds.), Criticism and the Growth of Knowledge, Cambridge: Harvard University Press, 1970, p. 1-23; and Popper, K., Conjectures and Refutations : the Growth of Knowledge, London: Routledge and Kegan, 1972.
 - (2) Blaug, M., Kuhn versus Lakatos, or Paradigms versus Research Programs in the History of Economics, History of Political Economy, Vol. 7, 1976, p. 399-433.
 - (3) Hempel, C.G., Aspects of Scientific Explanation, New York: Free Press, 1965; and Nagel, E., Problemen van begrips- en theorievorming in de sociale wetenschappen, in Nauta, L.W.(red.), Het Neopositivisme in de Sociale Wetenschappen, Amsterdam: Van Gennep, 1973, p. 67-89.

certain notions of which variables are important. Without such notions we would be confronted by a bewildering world, not knowing to look for what and where and why. Although simplification and overdetermination of such scientific endeavours is a fundamental problem of social science research (1), models still serve as interesting points of departure for any analysis. By emphasizing certain variables, they may capture the basic features and trends of the problem, the activity, the behaviour or the event being studied

Although any research in social sciences should follow this ideal pattern, the depth and the outcome of such an endeavour is partly determined by the subjectmatter of the specific field. Here, we are dealing with the field of International Relations, still a rather ambiguous discipline (2). Time and again models have been elaborated to analyze and explain events and activities

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- (1) For the concept of overdetermination, see Przewski, A. and Teune, H., The Logic of Comparative Social Inquiry, New York: John Wiley and Sons Ltd., 1970.
- (2) Some authors have tried to give a concise summary of the problems of International Relations. We mention a few contributions :
- Alker, H.R. and Bock, P.G., Propositions about International Relations, in Robinson, J.A., Political Science Annual Volume 3, 1972.
- Hyvärinen, R., Monistic and Pluralistic Interpretations in Study of International Politics, New York: Praeger Publishers, 1971.
- Lijphart, A., International Relation Theory : Great Debates and Lesser Debates, International Social Science Journal, Vol. 26-1, 1974, p. 11-21.
- Palmer, N., A Design for International Relations Research, Scope, Theory, Methods and Relevance, Englewood Cliffs, New York: Prentice Hall, Inc., 1972.

in the international system (1). Some theories have been efforts to produce a conceptual framework in the form of a set of explanatory hypotheses within which the whole discipline could be casted (2). Others have been less ambitious and have only tried to devise a right way of studying the phenomena of world affairs, i.e., constructing theories defined as a set of questions (3).

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- (1) We list here some of the literature in International Relations which has concentrated on the summary of theory-building in the discipline :

Burton, J.W., International Relations, A General Theory, Cambridge, Ma.: Harvard University Press, 1967.

Coplin, W.D. and Kegley, C.W., Analyzing International Relations, New York: Praeger Publishers, 1975.

Groom, A.J. and Mitchell, C.R., International Relations Theory : A Bibliography, London: Frances Pinter, 1978.

Hoffman, S., Contemporary Theory in International Relations, Englewood Cliffs, New York: Prentice Hall, Inc., 1977.

Ibid., The State of War, New York: Praeger Publishers, 1965.

Holsti, K.J., International Politics : A Framework for Analysis, Englewood Cliffs, New York: Prentice Hall, Inc., 1977.

Kaplan, M., New Approaches to International Relations, New York: St. Martin's Press, 1968.

Knorr, K. and Rosenau, J.(eds.), Contending Approaches to International Politics, Princeton: University Press, 1969.

Taylor, T., Approaches and Theory in International Relations, London: Longman, 1978.

- (2) The 'realistic' theory of International Politics, elaborated by Morgenthau, H., Politics Among Nations, The Struggle for Power and Peace, New York: A. Knopf, 1970, is a good example of a grand theory. Also the philosophies of history by Hegel, Marx, Spengler, Toynbee are theories defined as a set of answers.
- (3) The system theory by Kaplan, Liska's equilibrium theory, or Snyder's decision-making approach are examples of theories defined as a set of questions.

In the present study we are not so much interested in all that the theory of International Relations has produced. Here, we only want to indicate that the literature in International Relations has never been dominated by any general consensus concerning the dimension of the subject or the appropriate mode of analysis. In other words, the frameworks for understanding international politics and the underlying assumptions concerning the basic structure of the international system have always been under scrutiny.

This chapter addresses itself first to the question of competing frameworks, limiting itself to a discussion of the 'realist' model and the 'complex interdependence' model. Secondly, it will specify the basic assumptions of our own research, which is primarily focussed on the behaviour of small states towards international cooperation seen from a Rational Actor approach.

A. Competing Frameworks and the Study of International Relations

1. The International System : the Classical Model

a. Basics of the Classical Model

In a first section we try to explicate the basics of the classical framework in which many theories in International Relations have been developed. Much research in International Relations did start from two assumptions : 1) the state-centric assumption, i.e., the governments are the only important actors in international relations and 2) the state-as-actor, i.e., the governments are unitary actors in the sense that one can usefully ascribe to them at least some of the characteristics of purposiveness and choice ascribed to persons. These two assumptions have long been at the core of any model explaining international relations (1).

In the 'classical' school power is the central concept. National power and security are seen as the primary goal and strategic choice as the emphasis of every governmental action. By focussing on the presumed common objective of maintaining the autonomy of governments against the danger of military defeat, it is rather an easy step to the assumption that all governments are internally united by a desire for military security. This assumption makes it, of course, also more plausible that the states as coherent units are seen as the dominant actors in world politics. Within this framework it is also assumed that force is seen as a usable and effective instrument of policy and that there is a hierarchy of issues in world politics from the 'high politics' of military security to the 'low politics' of economic and social affairs.

In spite of significant differences in interest and focus, many explanations within this 'classical' framework have indeed attempted to understand events in foreign affairs as the more or

(1) Wagner, H., Dissolving the State : Three Recent Perspectives on International Relations, International Organization, Vol. 28, 1974, P. 435-466.

less purposive acts of unified national governments. Each assumes that what must be explained is an action, i.e., behaviour that reflects purpose and intention. One focuses on problems between nations in accounting for the choices of actors. Each assumes that the action is chosen as a calculated solution to a strategic problem. For each, explanation consists of showing what goal the government was pursuing and how the action was a reasonable choice, given the nation's objectives. In sum, in the 'realist' school the analyst attempts to structure events as purposive choices of consistent actors in order to show how a state could have rationally chosen that action (1). Allison has labelled this classical framework the Rational Actor Model (2).

Let me illustrate this model with the rapid tour of some major works in a number of areas central to the study of International Relations. All reflect to some degree the basic classical model. In the introduction to his major work 'Politics Among Nations', Hans Morgenthau clearly states the frame of reference upon which he relies : "To give meaning to the factual raw material of foreign policy, we must approach political reality with a kind of rational outline, a map that suggests to us the possible meanings of foreign policy" (3). To analyze national action in specific situations, Morgenthau has provided explicit instructions : "We put ourselves in the position of a statesman who must meet a certain problem of foreign policy under certain circumstances, and we ask ourselves what the rational alternatives are from which a statesman may choose (presuming always he acts in a rational manner), and which of these rational alternatives this particular statesman, acting under these circumstances, is likely to choose" (4). His 'realist' theory of

(1) Important to note in this model is the fact that identity between individual and collective rationality is assumed. In a later part of this chapter we return to this assumption.

(2) Allison, G.T., Essence of Decision, Explaining the Cuban Missile Crisis, Boston: Little, Brown and Cy, 1971, p. 10-66.

(3) Morgenthau, H., op.cit., p.5-6.

(4) Ibid., op.cit., p. 5.

International Politics has been a plea for the development of a rational theory in which politics should be governed by objective laws, universally valid.

In the essay 'The Actors in International Politics' (1) Arnold Wolfers observes : "Until quite recently, the states-as-the-sole-actors' approach to International Politics was so firmly entrenched that it may be called the traditional approach" (2). Although he accepts contributions from new developments in International Relations, he defends the traditional 'state-as-actor' model as "the standard on which to base our exceptions of state behaviour and deviations" (3). It establishes "the normal actions and reactions of states in various international situations" (4).

In an introductory note to his 'International Politics and Foreign Policy' (5) James Rosenau indicates some common characteristics of the majority of International Relations at that time : "Most observers ... (posit) a state-as-decision-maker model of the actors who comprise the international system" (6). Although well aware of the weaknesses and the simplifications of this approach, he defends it as a necessary abbreviation.

Also Raymond Aron's 'A Theory of International Relations' (7) is dependent on the assumption of a rational, unified, national actor. He writes : "La théorie des relations internationales part de la pluralité des centres autonomes de décision, donc du risque de guerre et, de ce risque, elle déduit la nécessité du calcul des moyens" (8). Although he differs in emphasis with other theorists from the 'realist' school, the actor whose goals are sociologically

(1) Wolfers, A., The Actors in International Politics, in Fox, W. (ed.), Theoretical Aspects of International Relations, Notre Dame: University Press, 1959.

(2) Ibid., op.cit., p. 83.

(3) Ibid., op.cit., p. 98.

(4) Ibid., op.cit., p. 98.

(5) Rosenau, J., International Politics and Foreign Policy, New York: The Free Press, 1961.

(6) Ibid., op.cit., p.78.

(7) Aron, R., Paix et Guerre entre les Nations, Paris: Calman-Levy, 1962.

(8) Ibid., op.cit., p. 28.

determined and who acts in a specific international system is also for Aron a rational, calculating government. When he explains national actions, Aron focuses on the calculations of this actor, i.e., on the logic of the conduct of international relations.

Even in more recent approaches, which take into account the changing nature of the international system, governments are still seen as the central actors in international relations. In the Intergovernmental Politics model we get a conventional picture of governments carefully aggregating domestic positions at the national level in any process of international cooperation (1). Consequently, international bargaining and consensus-building devices are considered as mere refinements of intergovernmental diplomacy. Important in this respect is the distinction between two different logics in international cooperation, that of integration and that of diversity. The latter often tends to restrict the former to the realm of welfare. In sum, this intergovernmental approach attaches much weight to the perception by governments of the issues and the assessment they make of their implications for the defence and promotion of vital interests, hence Hoffman's categories of 'high' and 'low' politics (2).

b. Some Critiques of the Basic Assumptions

In an area of growing interdependence and consequent integration processes some of the basic assumptions of the 'realist' framework have come under increasing criticism. In other words, the changing nature and the more complex structure of the present

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- (1) The Intergovernmental Politics model has been explained in : Rosenthal, G., The Men Behind the Decisions : Cases in European Policy Making, Lexington, Ma.: Heath, 1975 ; Wallace, H., National Governments and the European Communities, London: Chatham House, 1973 ; and Webb, C., Introduction : Variations on a Theoretical Theme, in Wallace, H. (ed.), Policy-making in the European Communities, London: John Wiley and Sons Ltd., 1977.
 - (2) Hoffman, S., Obsolete or Obsolete : The Fate of the Nation State and the Case of Western Europe, Daedalus, Vol. 95, Summer 1966, p. 862-915 ; see also Dahrendorf's interpretation in "A new goal for Europe", in Hodges, M. (eds.), European Integration, London: Penguin, 1972.

international system seem to suggest that quite some 'realist' contributions to the study of International Relations are outdated for genuine application. Different models have been proposed to integrate these changing characteristics of the system within the explanatory power of the realist framework.

An overarching framework which has mainly criticized the state-centric assumption of the 'realist' school is the functionalist and neofunctionalist approach. Functionalism stresses the importance of welfare issues as the key factor in international relations, in particular, international cooperation (1). These welfare issues suggest a consensus on means and ends more likely to induce cooperative behaviour among states than the politically sensitive issues such as defense and foreign policy. The premises of this approach are those of "a very simple utilitarianism in which the calculation of welfare interests is the ultimate determinant of behaviour (so that) a harmony of interests may be contrived" (2).

Closely related to this functional assumption is the belief that interest groups, anxious to maximize their material well-being, will necessarily be frustrated and disadvantaged by nationally oriented, politico-economic systems. These groups are thus expected to join with their functional allies across national borders for a re-adjustment of political and economic structures in order to meet the realities and requirements of the present international system. In sum, the functionalist interpretation, governed by a pervading rationalism, stresses common interests, the recognition of a common goal and the necessity of joint action for its realization along purely functional lines. Policy-making is a problem-solving exercise rather than a political process, also at the international level.

(1) For an analysis of functionalism as a theory and strategy for international cooperation see Groom, A.J. and Taylor, P. (eds.), Functionalism, Theory and Practice in International Relations, London: University Press, 1975.

(2) Harrison, R., Europe in Question, London: Allen and Unwin, 1974, p. 28.

Recognizing, however, the naivety of divorcing welfare from politics, the neofunctional approach has envisaged a positive contribution to international cooperation of the political processes in national political systems (1). This model identifies the clash of group interests, competing for access to scarce resources as the fundamental characteristic of pluralistic and industrialized societies. Self-interest is seen as the prime motivator of all political activity. Governments are not the only actors in international relations. They have to share the scene with interest groups, bureaucracies and political elites. They all compete for a maximum satisfaction of interest. This neofunctional approach presents an international version of the process of national policy-making in which interest group politics is seen as a harmonious process. Compared to the rather pessimistic intergovernmental model, neofunctionalism provides the analyst with a more optimistic view of the policy-making in international cooperation.

Also the state-as-actor assumption of the realist framework has come under increasing criticism. New approaches have been proposed to include new elements in the decision-making process of governments in international relations. Governments are not longer seen as unified actors in the international system. In this context Allison has introduced an organizational process model (2). According to this model a government actually consists of a "conglomerate of semifeudal, loosely allied organizations, each with a substantial life of its own" (3). Governmental behaviour is then understood "less as deliberate choices and more as outputs of large organizations functioning according to standard patterns of behaviour". These outputs must be coordinated and coordination re-

(1) For comprehensive surveys of neo-functionalism, see Haas, E.B., Beyond the Nation State : Functionalism and International Organization, Stanford, Ca.: Stanford University Press, 1964 ; Lindberg, L.N. and Scheingold, S.A., Europe's Would Be Polity : Patterns of Change of the European Community, Englewood Cliffs, New York: Prentice Hall, Inc., 1970.

(2) Allison, G.T., op.cit., p. 67-143. For an excellent introduction to the organizational theory, see March, J. and Simon, H., Organizations, New York: John Wiley and Sons Ltd., 1958; and March, J., Handbook of Organizations, Chicago: Rand McNally, 1972.

(3) Ibid., op.cit., p. 67.

quires standard operating procedures, i.e., rules according to which things are done. At any given time, a government consists of existing organizations, each with a fixed set of standard operating procedures (1). The dominant inference pattern is explained "by uncovering the organizational routines and repertoires, i.e., action programs, that produced the outputs that comprise the puzzling occurrence" (2).

The model's focus on government action as organizational output, partially coordinated by a unified group of leaders, balances the classical theory's effort to understand government behaviour as choices of a unitary actor (3). The model, however, concentrates on the aggregate behaviour of organizations rather than on individuals within organizations. It is a unified group of leaders which makes decisions within organizational constraints. Furthermore, because of the stress on routine behaviour within the outputs of organizations this model is probably most relevant when the subject matter is day-to-day administration rather than the explanation of behavioural trends in international relations.

Apart from these more theoretical remarks the organizational process model does not serve the practical interest of our own research. In other words, we are not so much interested in the internal decision-making process of governments when they engage in a process of international cooperation. We merely assume that the internal decision-making process has no bearing on the rationality of the state as an actor in international cooperation.

A new promising approach, which goes even further in its critique to the state-as-actor assumption of the realist school is the bureaucratic politics model. Certainly in economics there has been done quite some work to elaborate an economic theory of bu-

(1) Ibid., op.cit., p. 68.

(2) Ibid., op.cit., p. 88.

(3) Bloomfield, L.P., The Foreign Policy Process : Making Theory Relevant, Beverly Hills, Ca.: Sage Publications, 1974, p. 17-24.

reaucracy (1). In a sense this approach can be regarded as a refinement or extension of the organizational politics model. One moves from organizations to officials and leaders. Governmental behaviour is no longer understood as organizational outputs, but as results of a bargaining game involving players both inside and outside the government. The basic unit of analysis of the bureaucratic politics model is governmental action seen as bargaining along regularized channels among players with diverse interests and unequal influence (2). In other words, if a nation performs an action, that action is considered the resultant of the bargaining among individuals and groups within the government. In this approach the governmental actor is neither a unitary agent nor a conglomerate of organizations, but rather a number of individual players whose interests and actions have an important effect on the government's decisions and actions.

The bureaucratic politics model has mainly questioned the state-as-actor assumption in International Relations. It emphasizes what is to be learned by disaggregating governments and examining the sometimes disorderly process by which collective decisions are reached within them. Certainly when economic language is introduced into the analysis this model achieves quite some explanatory power. However, the model requires a lot of information on each player's position and specification of various action channels that it finally becomes rather complex (3). Moreover, in spite of its promising results in some areas, the model remains a partial explanation, focussing on the internal decision-making process of governmental behaviour. Although we recognize the importance of this

(1) See Niskanen, W.A., Bureaucracy and Representative Government, Chicago-New York: Aldine Publishing Cy., 1971 ; and Orzechowski, W.P., Economic Models of Bureaucracy : Survey, Extensions, and Evidence, in Borcharding, T.E., Budgets and Bureaucrats, The Sources of Governments, Durham, N.C.: University Press, 1975.

(2) Allison, G.T., op.cit., p. 162.

(3) For a critique of the Bureaucratics Model, see Art, R.J., Bureaucratic Politics and American Foreign Policy : A Critique, Policy Sciences, Nr. 4, 1973, p. 467-490 ; and Freedman, L., Logic, Politics and Foreign Policy Processes : A Critique of the Bureaucratic Politics Model, International Affairs, Vol. 56, 1976, p. 434-449.

process, in the present study we assume that it has no bearing on the actual behaviour of the state as an actor in international cooperation. We merely focus on the relations among states as coherent actors in international cooperation.

2. The International System : The Complex Interdependence Model

The validity of the realistic frameworks, i.e., the classical theory and its further developments, some argue, is becoming more irrelevant to the contemporary international system and has been thoroughly questioned and criticized by a new 'globalist' or trans-national view of the world. This complex interdependence model questions both assumptions of the realist school with, however, some more attention to the state-centric assumption.

This new approach to the study of international relations has mainly been developed by Keohane and Nye (1). The central assertion of the globalist view is that contemporary international system differs fundamentally from previous systems along several dimensions. It is argued that there are multiple channels which connect societies, that there is no clear or consistent hierarchy of issues and that the main instrument to achieve a nation's objectives is shifted from the use of military force to the manipulation of economic interdependence in the issue-areas concerned.

The interdependence model suggests that the security politics paradigm is not any longer the only predominant one as it was in the realist school. Changes in the distribution of resources within issue-areas, the evolution of the international system, changes in the importance of transnational actors, etc., they all have an impact on actual governmental behaviour. It further suggests that

(1) Keohane, R.O. and Nye, J.S. (eds.), Transnational Relations and World Politics, Cambridge, Ma.: Harvard University Press, 1972.

Ibid., Power and Interdependence, Survival, Vol. 15-4, July-August 1973, p. 158-165.

Ibid., Transgovernmental Relations and International Organization, World Politics, Vol. 27-1, 1974, p. 39-62.

Ibid., International Interdependence and Integration, in Greenstein, F. and Polsby, N. (eds.), The Handbook of Political Science, Vol. 8, Reading, Ma.: Addison-Wesley, 1975, p. 363-414.

Ibid., Power and Interdependence, World Politics in Transition, Boston-Toronto: Little, Brown and Co, 1977.

the role and function of the nation-state in world affairs will diminish, a view best characterized by the 'sovereignty-at-bay' model. Other actors have emerged and should therefore be included in the analysis of international relations (1).

The complex interdependence model suggests some distinctive political processes and lead to different predictions about foreign policy affairs (2). The military security issues of previous eras have given way to goals which can only be achieved in a global system. In short, the rise of the welfare state and the increasing sensitivity of national governments to the rising expectations of their societies have made them dependent upon the benefits provided by an open world economic system. This will of course lead to more international cooperation. Moreover, the multiple channels of interaction and subsequent transnational and transgovernmental relations have led the model to attach greater importance to the study of international organization.

Another suggestion which follows from the interdependence perspective is the stress on linkage strategies. Under realist conditions one expects linkages between issues to be made principally by strong states. However, when military force is largely immobilized under the interdependence model, linkages by powerful states are more difficult and less effective. For small and weak states the situation is the reverse: "Linkage of unrelated issues is often a means of extracting concessions or side payments from rich and powerful states. And unlike powerful states whose instruments for linkage are often too costly to use, the linkage instrument used by poor or weak states, i.e., international organizations, is available and inexpensive" (3). These institutions provide a politically congenial and rather cheap platform for small and weak states to achieve and further some of their objectives.

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- (1) Mansbach, R.W., Ferguson, Y.H., and Lampert D.E., The Web of World Politics: Non-State Actors in the Global System, Englewood Cliffs, New York: Prentice Hall, Inc., 1976.
 - (2) Sullivan, M.P., Competing Frameworks and the Study of Contemporary International Politics, Journal of International Studies, Vol. 7, Nr. 2, Autumn 1978, p. 93-110.
 - (3) Keohane, R.O. and Nye, J.S., Power and Interdependence, World Politics in Transition, Boston-Toronto; Little, Brown and Co, 1977, p. 31.

As to the state-as-actor assumption of the realist school this globalist view argues that "the assumption of states as unitary actors fails to take into account ... that subunits of governments may also have distinct foreign policies which are not all filtered through the top leadership and which do not fit into a unitary actor model. Thus, scholars have recently developed a 'bureaucratic politics approach' to foreign policy analysis explaining decisions of governments in these terms" (1). In short, the complex interdependence model absorbs the literature on bureaucratic politics into its own paradigm. As a result, the model is able to include the possibility of 'transgovernmental interactions', i.e., the extension across national boundaries of the process of bargaining and coalition formation between bureaucrats and bureaus. It becomes possible in this view for bureaus in two different governments but with smaller policy interests to concert their actions in such a way as to influence the official policies of both governments.

The complex interdependence model has introduced assumptions quite different from the basic ones used in the realist framework, i.e., relatively independent government agencies which seek to maintain their autonomy by denying to others any influence over the subgoals with which they are charged, and different constellations of interest groups, national and transnational, which grow up around these subgoals.

In their conclusion Keohane and Nye stress the need of a combination of both models. Although they acknowledge the superiority of the realist model in some cases, they argue that in some circumstances, in some cases and in some countries explanations and predictions based on 'realist' conceptions will be inaccurate. Their analysis of the law of the sea negotiations, the international monetary affairs or the American-Canadian relationship with the help of the complex interdependence model showed a better explanatory power. Briefly, both models can still be helpful.

(1) Keohane, R.O. and Nye, J.S., Transnational Relations and World Politics, Cambridge, Ma.: Harvard University Press, 1972, p. 331.

3. Competing Frameworks in International Relations : An Evaluation

We obviously cannot offer conclusive answers to the use of competing frameworks in International Relations. Here we may only briefly assess some of the main characteristics of the complex interdependence model. A first component of the globalist position is the view that nations are no longer the major actors in international politics. Even those arguing that models of complex interdependence may be more accurate than models based on realist assumptions, they nonetheless admit that "government-to-government interaction in the 1970s remains the most prominent, conspicuous, and far-reaching in impact among the many different kinds of interaction in the world system" (1). Moreover, the increasing importance of non-state actors has not found strong empirical support in the observed data of recent studies (2).

Similarly, although there is much talk of the decline in military issues and the rise of economic issues, nonetheless an important topic of discussion is still the dominant power of the U.S., the changes in U.S. power and the power relations or distributions within the system. While economic and other non-military issues seem to be more prominent today than in the past, this may simply mean that the surface issues have changed, not that the underlying issues have changed. The argument that the impact of international economic issues on nations will force nations into cooperative relations can also be viewed from the opposite perspective, namely that the economic interest groups in many nations may be so powerful unlikely to produce growing cooperation.

Another argument which has claimed for the substitution of a globalist world view for the realist view centers around a discussion of the concept of power. One argues that the poor understanding of power has led to misconstrued theoretical models with-

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- (1) Puchala, D. and Fagen, S., International Politics in the 1970s : The Search for a Perspective, International Organization, Vol. 28, Spring 1978, p. 251-252.
 - (2) See Mansbach, R.W., and others, The Web of World Politics : Non-State Actors in the Global System, Englewood Cliffs , New York: Prentice Hall, Inc., 1976.

in the realist framework. Often the explanatory potency of propositions based on power has been confused with the normative desire to bring about a peaceful world. Hence, the distinction between empirical and normative analysis is not always maintained in the classical model. However, the discussion on the concept of power is of not much importance to this study, because here we focus on cooperation among states and not on power relations among states.

To resume, rejecting the realist paradigm has been facilitated partly by the fact that changes have occurred in the contemporary system which might call that older paradigm into question, partly by the hope of many that we have entered into a new era of cooperation-out-of-necessity and partly by certain misunderstandings concerning an important concept of that paradigm.

In 'Power and Interdependence' (1977) Keohane and Nye adopted an interesting predictive power criterium to test their transnational relations approach. It brings a blending of theoretical and empirical work into International Relations' analysis and comes closer to what one should expect from a genuine scientific approach. However, Keohane and Nye do not claim to present a general theory of international politics. The purpose is not to replace the realist paradigm, but to demonstrate that it, along with other models of international processes, is insufficient for describing and explaining the politics of relationships characterized by complex interdependence. It is thus not intended to replace other views of, or approaches to, international politics but rather to demonstrate that in certain types of relationships traditional models fail at the levels of description, explanation, and prediction. The model is proposed as a necessary tool for understanding some types of relationships (1).

(1) Holsti, K.J., A new international politics? : Diplomacy in complex interdependence, International Organization, Vol. 28, 1978, p. 513-528.

That the best explanations of foreign affairs are insightful, personalistic, and noncumulative has often been noted. Consequently, perspective analyses of particular happenings tend simply to illuminate these occurrences rather than to contribute to an accumulating body of systematic knowledge in International Relations' theory. Some analysts justify this condition of the 'state of art' of theorizing about international relations as a consequence of the character of the enterprise. The complexity of the reality in the international system often creates a conflict between calls for more insight and demands for more cumulation of systematic knowledge within the discipline of International Relations. However, it is not the place here to make the critique of the scientific approach of International Relations. We only want to make some concluding remarks concerning the use of models in International Relations.

What can be learned from this discussion is the fact that no single paradigm can account for all international behaviour. To demonstrate that the power paradigm appears unable to account for a particular decision, event, trend or other international behaviour does not imply the entire paradigm is outmoded, but merely that it does not account for that specific behaviour. It may be, as Keohane and Nye contend, that both models apply to different situations, scopes or domains of behaviour. That means that both models, although they diverge along several important dimensions, still may be useful for understanding contemporary international politics. That, of course, is the question which should be the focus of research attention and not the forced imposition in every domain of the alleged importance of one paradigm over another. Therefore, one should know what kind of behaviour, scope, and domain a given framework is supposedly explaining.

Furthermore, accepting a specific framework with its basic assumptions as a launching point in International Relations' research, must make us fully aware of the risk of explanatory overkill. Any analyst should acknowledge the modesty of the model which he is working with, i.e., its merits and limits. Also in

our own research we incalculable a certain limitation of the generality of the used model, suggesting that history, different issue-areas or different institutional settings may require different explanatory emphasis, as Keohane and Nye already mentioned.

However, this position does not imply a reversal of the scientific approach to a rather descriptive historical position. Certain generalizations from models are possible. Certain law-like patterns do apply under certain circumstances. But the position is less ambitious than that of trying to fit all possibly relevant variables in a grand theory with general applicability, be it the realist school or the complex interdependence view.

To sum up, we accept the relativity of any model in International Relations, but are still convinced of the usefulness of a theoretical construction, in the sense that it stresses from a specific perspective some relevant variables. The choice of a specific model as a starting point and as a framework for research in International Relations, granted the simplification and limitations of the model, can still be helpful to analyze the basic trends and changing characteristics of the problem under study.

B. The Rational Actor Approach : Basic Assumptions of the Analysis

By concentrating on relations between governments, some scholars clearly hoped to be able to develop a model of International Relations that, while not necessarily accurate as a description, would nonetheless capture its basic features. The example of economists has sometimes been influential in the direction of what is called the Rational Actor Approach in International Relations.

However, the aim of scientific approaches in International Relations can neither be as explicit nor as ambitious as those in economics. It is said that the strength of economic theory is mainly based on 'large numbers', enabling theories to reach a sufficient level of abstraction. It is rather difficult to aim for a similar level of scientific approach in the study of International Relations.

The study of International Relations has often focussed on historical explanations of individual behaviour of actors and/or activities within the international system. We should, however, add that explanation of single facts, akin to historical explanations, is more or less an unescapable central task of this field. A descriptive pattern of analysis is often dominant. This also explains the rather poor predictive power element in many International Relations theories. To resume, the specific nature of International Relations has certainly had a significant impact on the development of theoretical constructions within the field.

In the present study the main interest of analysis is focussed on a subset of International Relations, i.e., cooperation among states within the international system. Although it is assumed that International Relations' models can not analyze processes in the international system with the same explanatory and predictive power as it is often aimed at in economic models, we still propose the Rational Actor Approach with its merits and limits as the starting point and guide of our own analysis.

In the following pages we explain the basic assumptions from which our analysis starts. The primary focus is on the response of national states to the possibilities and problems that the contemporary international system generates. In other words, what are the underlying assumptions under which states with differing objectives and differing capacities may cooperate with other states in the international system?

1. General Framework

The general framework from which the basic assumption of the present analysis must be understood is the neo-classical economic theory. This theory should be taken as a scientific research program in the Lakatos' sense. In other words, this is not a single model, but a whole range of models which are to be used according to the specific need of analysis. In short, we adopt this neo-classical economic theory as a box of tools guiding our own analysis.

Market economic theory has been useful for explanatory and predictive purposes to the extent the individual participant in its market relationship is guided by individual self-interest. Through the use of this specific assumption about human motivation, scholars have been able to establish for economic theory a limited claim as a positive social science. We must, however, immediately add that economic theory does not depend for its validity or applicability on the presence of the 'homo economicus'. Briefly, in economics there has been a growing awareness of the explanatory and predictive power of theories built on the logic of decision-making by rational individuals, endowed with given preferences and facing alternative sets of constraints (1).

(1) For extensive references to this literature, see Amacher, R.C., Tollison, R.D., Willett, T.D. (eds.), The Economic Approach to Public Policy, Ithaca, New York: Cornell University Press, 1976. See also the survey article written by Müller, D.C., Public Choice : A Survey, Journal of Economic Literature, Vol. X, Nr. 2, June 1976, p. 396-433.

The models of the neo-classical research program, which all center on constrained decision-making with given preferences, have a common core, i.e., the concept of rationality. Any useful theory of human action, be it positive or normative in content or purpose, must postulate some rationality on the part of the decision-making units. Therefore, it is imperative to be clear about the meaning of, conditions of, and limits to rationality as it is used in the neo-classical theory.

Rationality is exactly what we postulate in actors that makes them behave in a regular way. The essence of this rationality is that actors relate their actions to their goal. Then the first step to an interpretation of rationality is an explanation of goal-related behaviour, i.e., action which is related to selfish goals. To say that behaviour is related to goals is to say that there is purposeful action.

Then rational behaviour is identified as a subset of purposeful behaviour. Although purposeful action is the main element of the notion of rationality, the existence of purpose is known from the existence of preferences. It is a preferential ordering of goals and outcomes that reveals the existence of purpose, hence the importance of the utility function in economics. In short, rationality purports a consistency of choices within the context of maximizing a utility function under constraints.

2. Possible Relaxations

Relaxations of the neo-classical research program can be introduced along two lines of reasoning. First, one may discuss and question the content of the utility function. In other words, what are the objectives that an actor may pursue to maximize his utility function under constraints? These objectives may vary according to the content of the utility function. This utility function may contain only pecuniary objectives (i.e., maximizing income, profits, ...), tangible objectives (i.e., maximizing con-

sumption goods), non-tangible objectives (i.e., maximizing goals such as prestige, security, ...) and altruistic objectives (i.e., maximizing non-selfish goals such as caring for friends, family, etc.). Only in the last group of objectives there is an interdependency of utility functions, in the sense that the consumption of others enters in one's own utility function. We should add here that the degree of measurability of the utility function is an important aspect of the predictive power of the theory. This, of course, depends on the specific goals which enter the utility function.

A second relaxation of the neo-classical theory is directed to an introduction of the element of costs into the analysis. The definition of rationality refers to an actor who identifies courses of action appropriate to the achievement of his goals, evaluates these courses both in terms of expected costs and gains and in terms of probability of success, and selects the one that indicates the greatest net gain of valued things.

Perfect rationality, however, requires not only a stintless search for possible policies, but also perfect information on the probability, costs, and gains of various outcomes. The difficulties inherent in evaluating a large range of possible courses of action are usually insuperable because one lacks adequate information and time. Moreover, the limited predictability of how actors act and react entails some uncertainties. In other words, the perfectly rational actor does the best he can, coping with uncertainties, revising his policies, and knowing that he must be satisfied with less than the best solution. He knows that within his maximizing behaviour there are individual costs of information, decision-making and uncertainty. The introduction of these cost elements into the analysis has led to the notion of bounded rationality, compared to the concept of perfect rationality.

Both relaxations have the tendency to reduce the predictive power of their analysis. The more one loosens up the box with tools the more one risks to end up with ad hoc explanations. Therefore, they should both be used with precaution. Still, in economics, particularly in the theory of public choice, there has been made some progress to the extent that bounded rationality may contain a predictive element. For the further course of our own research, we limit ourselves to the usual concept of rationality, as it is assumed in the neo-classical economic theory. Only in chapter VI and VII we will consider some altruistic objectives in the utility function.

3. Main Transpositions

Turning to our own subjectmatter we must ascertain that the use of a Rational Actor Model in International Relations involves two main transpositions. We want to explain them briefly. First of all, we transpose the basic methodology of the neo-classical economic framework outside economics. The assumption of a consistency of choices within the context of maximizing the utility function under constraints has already often been adopted to the field of political science (1). In our own case the neo-classical framework is applied to the field of International Relations, more specifically to the cooperation among states in the international system.

In this context we may say a few words on the structure of the international system. The contemporary interstate system is defined by J.G. Ruggie as a 'modified Westphalia system', still essentially decentralized and based upon the will of states, but with each state willing to accept and to engage in some form and some extent in international cooperation (2). The international

(1) See for e.g. Riker, W.H. and Ordeshook, P.C., An Introduction to Positive Political Theory, Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1973.

(2) Ruggie, J.G., Collective Goods and Future International Collaboration, American Political Science Review, Vol. 66, 1972-2, p. 877.

system may then best be defined as a 'mixed cobweb', in which states remain important actors, but have to share the international arena with multinational corporations, transnational pressure groups and international organizations. These multiple channels of interaction imply a relaxation of the state-centric assumption, but they can still be incorporated in the analysis. In short, the multiplicity of actors in international relations, together with the complex patterns of interdependencies of decisions, events and developments and the extent to which states have established collective principles and forms of decision-making have all modified the centralized structure of the system, much as the market economy is modified by governmental intervention and regulation.

Here, we concentrate on the nation state as the decision-making unit to which the behavioural characteristic of rationality is to be applied. Governmental action at the aggregated level is taken as the basic unit of analysis. States are seen as rational actors in the sense that their patterns of action in international relations are correctly designed towards goal achievement. That implies that, in the present international system, purposeful action by states often requires a coordination of policies among countries to achieve commonly shared goals. In other words, international cooperation may often be seen as a realistic and rational response by states to achieve their goals.

In our own research the individual nation-state is assumed to be a rational and important actor in the 'mixed cobweb' of international relations. This does not imply that we discard the complex interdependence international system, but only that within this 'mixed cobweb' we limit ourselves to an analysis and explanation of the behaviour of states towards cooperation in the international system seen from a Rational Actor perspective.

Although we are aware of the incompleteness, partiality and limits of this perspective for International Relations' studies, we still believe that some basic features of a state's behaviour

towards international cooperation can be derived from this approach. Thus it is our purpose to examine the strength of the model as an analytical tool and to see how far its explanatory power extends.

A second transposition which is assumed in this Rational Actor Model is the step from individual rationality to collective rationality. This transposition points to a question which is quite important to our analysis, i.e., what behavioural assumption is used in analyzing cooperation among states in the international system. Referring to J. Buchanan and G. Tullock's conceptual framework for collective behaviour (1), we take the individualistic economic or the utility-maximizing assumption to analyze the behaviour of states towards international cooperation.

The economic approach assumes man to be a utility-maximizer in both his market and political activities. This approach has now been applied and extended to the analysis of the problems of collective action in international relations. In other words, the logic of collective action is broadened to the field of International Relations by transposing the individual-group relationship towards the state-international system relationship. This means that a country, as it participates in the international system, is assumed to be guided by the desire to maximize its own utility. The assumption implies that national interest, broadly conceived, is still to be a strong motivation force in the conduct of a country's international activities. It further assumes that states will integrate (or restrain) the pursuit of their interests with the international system, i.e., states will act in some accordance with the rules the international system has set up for a better management of the interdependence-relations among states. To resume, all states, regardless the differing capacities to achieve their objectives, are assumed to be value-maximizers. .

(1) Buchanan, J. and Tullock, G., The Calculus of Consent : Logical Foundations of Constitutional Democracy, Michigan: University Press, Ann Arbor Paperbacks, (1965) 1974.

The assumption of consistency of choices at the aggregate level is very often done in economics, e.g., the assumption of the firm as a rational actor. Also in politics the transposition from individual to collective rationality has been used, e.g., in the assumption of political parties as rational actors in Down's theory of Democracy (1). In International Relations it may pose some problems.

Rationality is often limited in International Relations to the extent that the behaviour of states often represents responses to a specific set of historical, political, or economic circumstances. Those responses may be courses of action which are difficult to incorporate into the analysis. The Rational Actor Model further assumes that the policy maker has control over his bureaucratic instruments. The public choice theory has put much of all this into doubt. In particular, the bureaucratic politics theory whose main focus is on the internal decision-making process has indicated that constraints and restraints emanating from bureaucratic behaviour impinge on the evaluation of choices.

The various limitations on the explanatory power of the Rational Actor Models do not make it useless for application in International Relations. Whatever the constraints that push the nation state to deviate from rational behaviour, the basic assumption remains that a state is a value-maximizer. It will try, as much as operating conditions and various idiosyncracies permit to do better for itself rather than worse. To that extent, admittedly variable, the country behaves rationally. Provided we are alert to the factors that limit rationality, this approach may still entail a great deal of explanatory power to analyze the behaviour of states towards international cooperation.

Although this strong assumption of collective rationality may raise a number of problems we will still assume for the further course of our analysis a consistency of choices at the aggregate level of the state in spite of the internal decision-making process within the state. In other words, we assume that the inter-

(1) Downs, A., An Economic Theory of Democracy, New York: Harper and Bros, 1957.

nal decision-making process has no bearing on the actual behaviour of the state towards international cooperation.

As a concluding remark of this section on the basic assumptions of the Rational Actor Model in International Relations, we may already briefly hint at the problem of public goods which is to be explained in Chapter III. We will see that the existence of public goods may lead to failures of decentralized decision-making. In other words, the existence of public goods in International Relations may lead to international 'market' failures in the sense of failures of decentralized decision-making and, consequently, to the need for cooperation among states in the international system.

CHAPTER II ATTEMPTS TO IDENTIFY 'SMALL STATES' : REVIEW OF THE LITERATURE

Introduction

Till recently research in International Relations had no or little interest in separate, scientific studies of small states' behaviour in the international system. The element of smallness per se did not give rise to much concern or study. Apart from monographs on specific small countries, interest usually centered on problems common to countries small and large. Only few authors analyzed small states as a category of international actors exhibiting behavioural traits which distinguish them from big states (1).

The traditional-historically as well as the more systematic-theoretically oriented analyses in the International Relations literature nearly all have studied and emphasized the power relations among big states. Some reasons can be put forward for the lack of interest in theorizing about small states' behaviour in the international system as a separate subjectmatter.

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- (1) See, for instance, Cremer, P., La notion de petite puissance et sa réalité politico-militaire, Chronique de politique étrangère, Vol. XXVII, Nr. 3, May 1974, p. 323-338 ; East, M.A., Size and Foreign Policy Behaviour : A Test of Two Models, World Politics, Vol. XXV, July 1973, p. 556-576 ; Fox, A.B., The Power of Small States : Diplomacy in World War II, Chicago: University Press, 1959 ; Keohane, R.O., Lilliputians' Dilemmas : Small States in International Politics, International Organization, Vol. XXIII, Spring 1969, p. 291-310 ; Ibid., The Big Influence of Small Allies, Foreign Policy, Spring 1971-1, p. 161-182 ; Mathisen, T., The Function of Small States in the Strategies of the Great Powers, Oslo: Universitetsforlaget, 1971 ; Nobel Symposium 17, Small States in International Relations, Stockholm: Almqvist and Wicksell, 1971 ; Rothstein, R.L., Alliances and Small Powers, New York: Columbia University Press, 1968 ; Väyrynen, R., On the Definition and Measurement of Small Power Status, Cooperation and Conflict, Vol. VI, 1971, p. 91-102 ; Vital, D., The Inequality of States : A Study of the Small Power in International Relations, Oxford: University Press, 1967.

First, the discrepancy in interest between big states and small ones may be understood in the light of traditional thinking in International Relations. Traditionally, big powers were considered as the subject, the 'movers' of international politics, while small states were mere object, 'followers' of the system. One is used to hearing definitions of the structure of the international system in terms of the number of big powers involved. Why else should notions like balance of power, bipolarity or multipolarity have taken such an important place in the theory of International Relations? Thus, the relations among the big powers were viewed as the determinant factor of the structure and the content of the international system. Inasmuch as power analysis has been an important domain in the study of International Relations (1), it is quite natural that little attention has been paid to the study of 'small states'.

Secondly, there has been a tendency to see 'small states' as nothing more than or no different from large states writ small. The major implicit assumption which underlies this view is that the behaviour of 'small states' is seen as the result of the same general processes of decision-making that are found in larger states. Therefore, characterizing 'small states' as less powerful big states, does not give any reason to study small states as a separate category of states. Thus, this viewpoint stresses the fact that behaviour rules which are valid for big states may - with some correction as to the difference of size - be applied to the policies of small states.

This reasoning, however, has to be related to the specific mood of the international system. In the bipolar cold war system and the balance-of-power system the power relations among countries were the dominating trend of analysis. In the present international system, characterized by an increased interdependence, a politicization of the international economic activity and subsequent

(1) Baldwin, D.A., Power Analysis and World Politics : New Trends versus Old Trends, World Politics, Vol. XXXI, Nr. 2, 1979, p. 161-194.

changing relations among countries and groups of countries (1), a trend for more cooperation among countries has become apparent.

(1) The literature on this subject is quite extensive. I only refer here to some contributions :

Aron, R., The Ambiguities of Interdependence, The Atlantic Community Quarterly, Winter 1975-1976, p. 405-421.

Brown, S., New Forces in World Politics, Washington D.C.: The Brookings Institution, 1974.

Bergsten, C.F. and Cline, W.R., Increasing International Economic Interdependence : The Implications for Research, American Economic Review, Vol. 66-2, 1976, p. 155-161.

Camps, M., The Management of Interdependence, New York: Council of International Affairs, 1974.

Cooper, R., The Economics of Interdependence : Economic Policy in the Atlantic, New York: Mc Graw-Hill Book Cy., 1968.

Hoffman, S., International Organization and International System, in Ferguson, Y. and Weiker, W., Contemporary International Politics, California: Goodyear Publishing Cy., 1973.

Keohane, R.O. and Nye, J.S., World Politics and the International Economic System, in Bergsten, F. (ed.), The Future of the International Economic Order, Lexington: Heath, 1973, Chapter 5.

Ibid., Power and Interdependence, Survival, Vol. 15-4, July-August 1973, p. 158-165.

Ibid., Transgovernmental Relations and International Organization, World Politics, Vol. 27-1, 1974, p. 39-62.

Ibid., International Interdependence and Integration, in Greenstein, F. and Polsby, N. (eds.), The Handbook of Political Science, Vol. 8, Reading, Ma.: Addison-Wesley, 1975, p. 363-414.

Ibid., Power and Interdependence, World Politics in Transition, Boston-Toronto: Little, Brown and Cy., 1977.

Morse, E.L., The Politics of Interdependence, International Organization, Vol. 23, 1969, p. 311-326.

Nau, H.R., From Integration to Interdependence : Gains, Losses and Continuing Gaps, International Organization, Vol. 33-1, Winter 1979, p. 118-147.

Stojonovic, R., Interdependence in International Relations, International Social Science Review, Vol. 30-2, 1978, p. 238-252.

Van de Meerssche, P., Recente Ontwikkelingen in het politiek-economisch mundiaal systeem, Economisch en Sociaal Tijdschrift, Vol. 32, Nr. 4, Augustus 1978, p. 437-448.

Young, O., Interdependencies in World Politics, International Journal, Vol. 24, 1969, p. 726-750.

These structural characteristics of the international system have an impact on the way 'small states' perceive their role in the system and, more specifically, on their actual behaviour in international cooperation. In other words, the international system has become more than a mere interaction pattern of big powers. It has grown to a rather complex entity of states of different size with conflict as well as cooperation as possible modes of action.

As a consequence, scholarly research increased its interest in the behaviour of 'small states', which are seen as having their specific possibilities and problems in the international system. The question is then asked to which extent their behaviour pattern differs qualitatively from a pattern followed by big countries and to which extent deductive conclusions can be drawn from the behaviour of 'small states'. In International Economics as well as in International Relations the category of 'small states' has been subject to theoretical analysis.

Before we turn to a summary and evaluation of the literature on 'small states', we briefly want to raise a few questions. A first difficult question is that of defining smallness : where does smallness begin and where does it end? Should the criteria be population, area, density of population resources, or an aggregated combination of all these elements ; or is it not necessary to bother about a definition and qualify as small those countries which common sense considers small? In other words, is it justified to look at 'small countries' as a genuine category deserving examination, or are the situations so diverse that they have nothing in common but a meaningless smallness and therefore, there is no useful purpose to study their problems jointly. In short, although conceptual problems should be solved satisfactorily, one should always keep in mind that the usefulness of a definition is a mere function of its problem-solving orientation.

A second problem is connected to the question of what kind of independence a 'small state' can enjoy, politically and economically. If there is such a vague category as small states with a minimum of specific characteristics and problems, how do they fit in the present international picture, what kind of relations determines their international behaviour, and what role can they play on the international scene? Is the sole and ultimate solution for a small country to integrate politically or economically with other countries? Is the need for international cooperation greater for a small country and consequently, will it act differently in international organizations? Finally, what are the specific patterns of action of 'small states' towards international cooperation?

In general, the problem we are tackling in this scientific study is the following one : Does a small state-actor, the unit of analysis and the unit of comparison in our analysis, act qualitatively different in international cooperation than a big state-actor and if so, can we draw deductive conclusions from these differences in international behaviour? Let us now turn to a summary and evaluation of the literature on 'small states'.

A. International Economics' Theory

We start this summary with a brief look at the international economics theory. The category of 'small states' has been the subject of specific treatment in economics. This interest resulted in the so-called small-country assumption in international economics. In particular, the pure theory of international trade, dealing with the gains from exchange and specialization, indicates the significant benefits small countries may derive from the international system. It implies, from an economic point of view, the generally positive behaviour of 'small states' towards cooperation in the international system.

The general argument in the theory of international trade purports that each country specializes in that commodity in whose production it has a comparative advantage (1). Among roughly equal-sized countries a country's gains from exchange and specialization are larger the more the world price ratio differs from that prevailing under autarchy. The whole gain of trade is appropriated by country A when the world trade price ratio is exactly equal to the pretrade ratio of country B. Thus the world price must lie between the extremes of the two countries' pretrade price ratio.

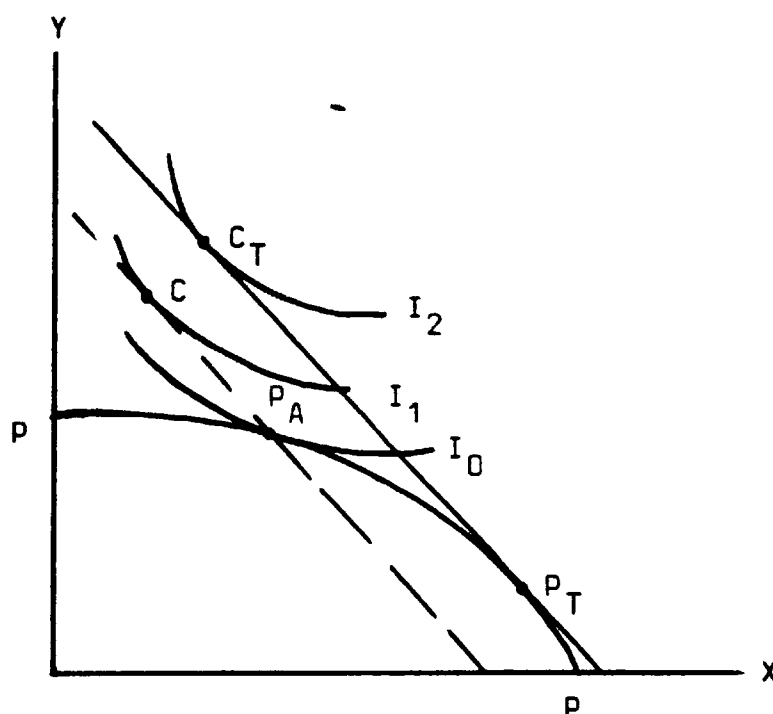
We now briefly outline the content of the small-country assumption. In the small country case the terms of trade will necessarily coincide with the larger country's pretrade ratio, with the gains from trade accruing to the smaller country. This result is due to the fact that the change in the relative quantities of the two goods offered in the big country after the opening of trade is so small that it leads to only a marginal change in the relative price, sufficient to bring about the shift along the production possibility curve. Since the domestic relative prices of the two commodities in the big country are the same before and after trade, consumption will remain unchanged. In the small country, however,

(1) For more detailed analysis I refer to any textbook in International Economics.

the production and consumption pattern will change with trade.

Figure II-1 shows the production and consumption pattern of a small country. Under autarchy the small country can reach a level of welfare indicated by I_0 . Under international trade and at given terms of trade, indicated by the slope of line $C_T P_T$, the small country is able to reach a higher welfare than under autarchy, i.e., a welfare level given by I_2 (line $C_T P_T$ is tangent to the production possibility curve PP as well as to the consumption curve I_2). As a consequence, its production point moves from P_A to P_T and its consumption point from P_A to C_T .

Figure II-1 Gains from International Trade
(Small-Country Case)



This total gain from international trade can be subdivided into gains from exchange and gains from specialization. The gains from exchange allow the small country to change its consumption pattern without changing its production. Through international trade the small country can shift its consumption to point C , while remaining at production point P_A . The increase in welfare from I_0 to I_1 indicates the gains from exchange.

The small country also enjoys gains from specialization in production. At the terms of trade given by the slope CP_A the marginal rate of transformation in production does not equal the price ratio between the goods. The small country will benefit from international trade by adjusting its production to the extent the marginal rate of transformation equals the terms of trade. In other words, the production pattern of the small country will shift along the transformation curve from P_A to P_T . The increase in welfare from I_1 to I_2 indicates the gains from specialization.

The analysis clearly shows that a small country unable to affect world prices through its production and consumption decisions can benefit from international trade, reaping benefits from an increased exchange as well from an increased specialization in production. In International Economics the small state is considered to be a price-taker, in the sense that it cannot influence the terms of trade. Thus from an economic point of view 'small countries' have an incentive to cooperate in the international system because of the importance of the gains from trade.

However, these potentially large benefits to the small country do not come entirely without cost. The small country is dependent through trade on the willingness of the rest of the world to continue trading. At the same time, the rest of the world has a diversified production and is much less dependent on trade than any small country. In other words, from the small country-assumption follows immediately that small countries are quite vulnerable to changes in the international system. This whole discussion is centered around the model of an open economy and, in particular, on the implications of the type and the degree of openness of the national economy with respect to the performance of national economic policies.

The situation that the country is so small relative to the outside world that world market prices for all goods are independent of the economic actions of the country itself also carries its benefits. For instance, if inflation is brought about by international price changes, the government in a small country can often

tie aggregate demand management to unemployment and current accounts targets, rather than to the price target. In other words, small countries can take a 'free ride' on the anti-inflationary policies of the big countries - as long as the governments in the small countries were willing to accept a deterioration in the current account of the balance of payments (1).

Concluding, we may say that the category of small states has been the subject of specific treatment in International Economics. The introduction of the small-country assumption indicates a picture of the behaviour of small states towards international cooperation. The fact that small states derive significant benefits from the international system through the gains from trade, and that they are quite vulnerable to changes of this system through the relative openness of their national economics are tending to small countries towards international cooperation. We will now turn our interest to what the International Relation's theory has said about the category of 'small states'.

(1) Lindbeck, A., Stabilization Policy in Open Economics with Endogenous Politicians, American Economic Review, Vol. 66-2, 1976, p. 1-18.

8. International Relations' Theory

1. Summary of the Literature

Although the categorization of states according to size has long been a part of International Relations, it has always constituted a point of discussion. In the beginning of the 19th century with the emergence of the nation states the formalization of the categories of great and small powers found its legitimation in the hierarchical principle implicit in the Concert system. The Treaty of Chaumont in 1814 signed by England, Prussia, Austria and Russia defined a big power as a power which could provide or guarantee 60.000 men in the war against Napoleon. This very simple classification in terms of the number of soldiers available clearly indicates the functional link with the power pattern of that international system. The present international system, however, has grown to a much more interdependent system in which the relations among states have become complex and intricate.

In the following pages we give a concise summary of the state of art of the International Relations' theory on 'small states'. The purpose is to present different classification possibilities in order to evaluate their relevance with respect to the behaviour of 'small states' towards international cooperation. The presentation will indicate that the notion of 'small state' has a rather diffuse and ambiguous content, and is much linked to the analysis of power in International Relations. Summarizing, it is of not much help to our own study. Hence, we shall be brief.

According to the criteria used in the literature we find two broad groups of categorization. Countries can be classified according to differences in a) the objective power sources

b) behavioural tendencies

a. Objective Power Sources

Most of the classification schemes of states according to their size are based on the inequality of the power sources, i.e., factors which constitute the power of a state. These power sources are related to the surface of the territory, the size of the population, the military strength, the dimension of the economic production, the availability of certain primary resources, etc... A complementary significance is often attributed to some elements of non-material nature. In this perspective Liska says that "a state can partly compensate quantitative inferiority by qualitative superiority with respect to location, organization, social cohesion, morale and statesmanship ; it can grow beyond its size due to inner equilibrium of the social, ethnic and institutional structure, and the integration of available economic and other resources" (1). In a brief tour we indicate the most obvious objective power sources.

a.1. Military Capability

The military capability has been the most obvious power source. The idea that states can be classified according to their real or potential military strength has been elaborated by A. Vandebosch (2).

According to Vandebosch, the test of whether a state is a small state or whether it is entitled to the rank of big state has been military power, both actual and potential. He indicates that after every war, and especially after every general war, there is a re-evaluation of the relative strength of the larger states. This classification remains generally accepted until armament, re-armament, or a new demonstration of military power changes the situation. Vandebosch then defines a small state as "a state which is unable to contend in war with the great powers on anything like equal terms" (3).

(1) Liska, G., International Equilibrium, Cambridge, Ma.: Harvard University Press, 1957, p. 25-26.

(2) Vandebosch, A., The Small States in International Politics and Organization, Journal of Politics, Vol. 26-2, May 1964, p. 293-312.

(3) Ibid., op.cit., p. 294.

Vandenbosch clarifies his standpoint with a brief examination of history since the emergence of the nation states. He contends that from the Congress of Vienna through the European Directory, the two Hague Peace Conferences and the Paris Peace Conference till the League of Nations, small states were stakes rather than active players in the international system, consumers rather than producers of security.

This classification seems rather difficult to handle. It is certainly not generally applicable to all periods. It does hold for the latter part of the 19th century and the period 1939-1970, not however, to periods before German and Italian unity and before the constitution of colonial empires. In short, the characteristics of the present international system have allowed 'small states' to grow back to importance. Further, some 'small states' have played and do play an important role in the international system (e.g., the role of Serbia in World War I, the American-Israel relationship, the OPEC-countries, ...).

Thus, the emphasis on the military strength as the main power source is quite understandable in an international system in which military capability and the potential use of this power base was considered as an important tool to achieve the objectives of political and economic survival. But insofar as the perceived margin of security for states or groups of states has widened, goals have become more diversified, and consequently, other secondary objectives have come to emerge. It would then be terribly simplistic and not very useful to apply an objective power source such as military capability as a criterion to classify states in an international system.

a.2. Population Size

Another objective power source which has been used as a criterion for classification is the population size of countries. David Vital uses this power source criterion as basis for classification in his book 'The Inequality of States', in which he describes and analyzes the limitations and possibilities of the foreign

policies of small states (1). He defines the measure of state power as "the capacity of a government to induce other states or governments to follow lines of conduct of policy which they might otherwise not pursue : alternatively it is the capacity to withstand the pressure of other states or governments, which are intent on deflecting it from a course which the national interest or the interest of its leaders would appear to require" (2).

Vital takes the approach of categorizing states into size-groups along intuitively acceptable lines without defining the categories in conceptually useful terms. He then distinguishes three groups, great, middle and small states, drawing the 'rough upper limits' for the latter as a) a population of 10-15 million people in the case of economically advanced countries ; and b) a population of 20-30 million in the case of underdeveloped countries. Admitting that such a categorization is "frankly subjective, if not arbitrary (3)", he defends it by referring to the close relation with the every day experience. Moreover, he concludes that "it should, perhaps, be stressed that these definitions are put forward to make clear the identity of the subject of this study, not with a view to the creation of a precise concept for manipulative analytical purposes" (4). Nevertheless, Vital forgets fully to indicate on which considerations his criteria are determined, or what makes the distinction between developed and underdeveloped countries. Furthermore, in which categories do we put countries such as Cuba, Israel, Kuwait, ...? To put it briefly, Vital's classification scheme remains an empty, useless box.

(1) Vital, D., The Inequality of States, A Study of the Small Power in International Relations, Oxford: University Press, 1967.

(2) Ibid., op.cit., p. 87.

(3) Ibid., op.cit., p. 8.

(4) Ibid., op.cit., p. 9.

a.3. Population-Economic Criterion

A further elaboration on the classification of states has been presented by J. Vellut. He proposed a combination of a population criterion and an economic criterion (1). His starting point is the search for "some simple, empirical means of measuring on a uniform basis the actual or potential capacity of the states to bring influence to bear in international affairs" (2).

Vellut uses rough indicators as population figures and the gross domestic product. He then distinguishes five groups of nations: big powers, middle powers, small powers, smaller powers and mini-powers. As to the magnitude of the criteria : middle powers have a population of at least 50 million people and/or GDP of at least 10 mia dollars ; small powers are nations with no more than 50 million people and no less than 10 and/or a GDP situated between 2 and 10 mia dollars ; smaller nations have a population between 5 and 10 million people and at least a GDP of 1 mia dollars ; mini-states are considered as nations with less than 5 million people and a GDP of less than 1 mia dollars. To identify the category of big powers, Vellut introduces some additional politico-military criteria. To be considered as a big power, a state must satisfy three out of the following conditions: 100 million people, a GDP of at least 25 mia dollars, permanent representation in the Security Council and an army of at least 300.000 men.

Although Vellut seems less arbitrary in determining his criteria than Vital, his categorization of states looks rather an absurd enterprise. It is a mere search for limiting the object of research on doubtful grounds. From an analytical point of view, this classification scheme is not helpful at all in finding differences in the behaviour of the different categories of states. The main reason is the lack of conceptually significant characteristics which could allow a comparison of behaviour.

(1) Vellut, J., Smaller States and the Problems of War and Peace, The Journal of Peace Research, 1967-3, p. 254-257.

(2) Ibid., op.cit., p. 254.

a.4. Aggregated Criterion

A last objective power source is a criterion which aggregates different power sources. In 'World Power Assessment 1977' R.S. Cline has elaborated a quantified rankinglist of states (1). Cline ranks the countries according to a complex and aggregated perceived power weight.

He considers the nation-state still as the decisive political unit of action and responsibility. Power is defined by Cline as "the ability of the government of one state to cause the government of another state to do something which the latter otherwise would not choose to do, whether by persuasion, coercion, or outright military force" (2).

Cline arrives at a perceived power criterion : $P_p = (C + E + M) \times (S + W)$. It distinguishes between concrete power elements and political aspirations and moral concepts. For each of these elements a certain weight is attached to a country. The final result is a consolidated rankinglist of the countries expressing their perceived power in relation to others.

The first three elements make up the concrete power factors. 'C' stands for critical mass, i.e., population and territory. 'E' measures the economic capabilities ; GNP-based rankings are modified or adjusted for specific economic strengths and weaknesses (energy, critical non-fuel minerals, industry, food and trade). 'M' stands for military capability, the strategic force balance as well as the conventional one. Strategy ('S') and national will ('W'), determined by the level of national integration, the effective strength of national leadership and the perceived relevance of national strategy to national interest, constitute the final ratings of the formula.

(1) Cline, R.S., World Power Assessment 1977, Colorado: Westview Press Boulder, 1977.

(2) Ibid., op.cit., p. 6-7.

This ranking tries to give a quantified idea of the structure and composition of the international system. It does not, however, imply a certain behaviour for a specific country or specific category of countries. Hence it is not very useful for research purposes in which we want to analyze behaviour-attitudes of states, particularly the 'small states' behaviour towards international cooperation.

Conclusion

Rank criteria based on objective power sources to classify states seem very common in the literature. However, the use of a single objective power source such as area, population, GNP, or even a combination of all these aspects to establish the power hierarchy in the international system (e.g., economic smallness measured by GNP or industrial production ; political smallness by low involvement in international organizations ; or military smallness indicated by the military budget, etc. ...) proves to be too simplistic and tends to overlook the complex relations among states of different size according to the different issues involved and the different levels of interaction in the international system. Moreover, most of these classification schemes lack conceptually significant characteristics which allow a comparison of behaviour of states on a rigorous basis.

Resuming, classification schemes of states according to objective power sources seem rather empty and not very helpful for scientific analysis. Holsti's assertion that "no single and permanent hierarchy of states - the great and the small, or the influential and the weak - exists " (1) is a merely obvious conclusion from this brief summary. Most of the literature is naive and can be reduced to tautological discussions without actual use for the explanation of policies of countries. Moreover, all these schemes are dealing with power relations among states in the international system. Here,

(1) Holsti, K.J., International Politics : A Framework for Analysis, New York: Columbia University Press, 1968.

we are only interested in the behaviour of states towards cooperation. Power analysis, still an important domain of International Relations' theory, does not constitute part of our study. As a consequence, classification of states related to this analysis is of no help to our own study.

b. Behavioural Tendencies

As far as I know, there has been little attempt to define small power status using a nation's behavioural tendencies as a basis. It is another way of classifying states and therefore, worthy of some consideration in this summary of the literature. Robert Rothstein analyzes differences in security perceptions among states in order to extract differences in behaviour.

b.1. Security Perceptions

Rothstein has sharply criticized a categorization of states based on objective power sources. The central proposition of his book 'Alliances and Small Powers' (1) is the idea that "small powers are something more than or different from great powers writ small" (2). However, his ensuing generalizations refer only to these small powers "which are within an area of great power confrontation or which fear that confrontation will affect their interests significantly" (3).

This general idea leads him to reject a definition of small power based purely on objective criteria, since such a definition "ends by aligning states along an extended power spectrum so that it can only be said that B is stronger than A but weaker than C. The result is that the significance of the categories Great and Small is effectually denied" (4).

(1) Rothstein, R.L., Alliances and Small Powers, New York: Columbia University Press, 1968.

(2) Ibid., op.cit., p. 1.

(3) Ibid., op.cit., p. 8.

(4) Ibid., op.cit., p. 23.

Rothstein continues his argumentation by stating that "the categories Great Power and Small Power have a significance beyond relative power ratios ; that both groups of states develop behavioural patterns which decisively separate them from non-group members and therefore, it does make sense to talk of the behaviour of small powers in general or of great powers in general" (1).

Rothstein illustrates the distinction he is drawing by contrasting the situation of great powers and small powers in otherwise similar situations of threat. In this comparison he points to three unique aspects of the small powers' situation : 1) the necessity of outside help every time the small state is faced with a 'security-dilemma' ; 2) the state has a narrow margin of safety with little time for correcting mistakes and 3) the state's leaders perceive its weakness as essentially unalterable. Consequently, these characteristics result in a divergent reaction of big states and small states towards the perception of their security. A wholly different , but nevertheless rationally-based, range of policy options is open to small states (e.g., neutrality, isolation, non-alignment, alliance policy, ...).

In order to reflect his argument in a definition, Rothstein stresses the point that any new definition of small states ought to indicate the idea of psychological as well as material dimension to the distinction between big states and small ones. It is thus clearly inadequate, according to Rothstein, to describe small states merely in terms of being less powerful, because they also realize the implication of their weakness in the international system. Henceforth, Rothstein develops the following definition : "A small power is a state which recognizes that it can not obtain security primarily by use of its own capabilities, and that it must rely fundamentally on the aid of other states, institutions, processes or developments to do so ; the small power's belief in its inability to

(1) Ibid., op.cit., p. 23-24.

rely on its own means must also be recognized by the other states involved in international politics" (1).

Although Rothstein says his description is acceptable for any international system, he does not specify which states in the contemporary world would not be small powers under his definition. It would seem that only the United States, the Soviet Union and China would possibly classify. All other countries rely with different degrees on outside protection for their security and therefore, are to be considered, undifferentiatingly, small. His definition becomes thus rather useless for analysis in the present international system, when only two or three states qualify for great power status with all the rest categorized as small.

In this respect Keohane writes that "in a nuclear age in which defense is impossible for all states and effective deterrence possible only for a few, a definition based on capacity to obtain security must collapse. When insecurity is constant and all-pervasive, it can not serve as a significant distinguishing variable" (2). The characteristics of the international system seem to confirm Keohane's remark. We should, however, add that since the late seventies changes within the international system have brought the military security issues back to the foreground.

In the further analysis Rothstein is concentrating on small states behaviour towards international organizations, especially on the alliance policy of small states. According to Rothstein the only realistic security policy for small powers is alliance commitment. The stress on security perception as a small power motivation seems to be clear. He mentions three reasons for their attachment to international organizations : 1) the formal equality in those organizations ; 2) the potential security of membership and 3) the possible capacity of the organization to restrain great powers. He tries to

(1) Ibid., op.cit., p. 29.

(2) Keohane, R.O., Lilliputians' Dilemmas : Small States in International Politics, International Organization, Vol. 23, Spring 1969, p. 293-294.

verify his conclusion by mentioning some miscellaneous historical events. However, Singer and Small's study on formal alliances in the period 1816-1965 hardly supports Rothstein's tentative conclusion (1). At the end of his book Rothstein modifies his own conclusion arguing that "the defects of collective security have submerged its virtues" (2). Finally, we are left with an ambiguous judgement that small states' support for international organizations has often been misguided.

b.2. Other Behavioural Tendencies

If we break away from the military security context to which Rothstein has related his classification scheme of states, we still can point to some other behavioural tendencies. Another characteristic sometimes attached to small states is their alleged peaceful and accomodative foreign policy orientations. Holsti formulated this conception in the following way : "Small powers frequently offer mediation or peace-keeping services in conflict situations because of their lack of direct involvement in crisis areas. Their lower status and level of international involvement may allow them to undertake certain tasks that would be denied by the contestants to major powers" (3).

Quite a few empirical studies found positive correlations between the rank of the country and the number of transactions in the international system, the export-orientation of the economy, the degree of activity in U.N. debates, the extensive participation of small countries in U.N. peace-keeping activities, etc. ... However, it might be doubtful whether these results can be generalized to include all small countries.

(1) Singer, D., and Small, M., Formal Alliances 1816-1965 : An Extension of the Basic Data, Journal of Peace Research, 1969-3, p. 257-282.

(2) Rothstein, R.L., op.cit., p. 44-45.

(3) Holsti, K.J., National Role Conceptions in the Study of Foreign Policy, International Studies Quarterly, Vol. 14, Nr. 3, 1970, p. 242.

Another behavioural characteristic connected with the small state definition is geographical restriction, or regional orientation, in the behaviour of small states in the international system. The corresponding orientation is clearly more global in the case of big states (1). This defining characteristic is, however, hardly an independent variable because it is linked to the rank of the interacting country.

Conclusion

Although impressions gained from a categorization of states according to behavioural tendencies seem to indicate a certain relationship between rank and international activity, this relationship is by no means self-evident. Moreover, Rothstein concentrates his analysis on the behaviour of states with respect to the security issue. I find this a rather narrow framework which does not take into account the changing structure of the international system. Also the other behavioural tendencies seem to concentrate on one particular pattern of behaviour whose specificity is not always self-evident. Briefly, this type of classification remains rather vague, if not tautological, and does not provide an apt framework for the analysis of small states' behaviour towards international cooperation.

2. Analytical Framework for Foreign Policy Behaviour

Pointing at some of the weaknesses of the present small states' literature, Rosenau provides us with a more general framework of analysis in his 'Scientific Study for Foreign Policy' (2). He dis-

(1) See e.g., Bernstein, R., and Weldon, P., A Structural Approach to the Analysis of International Relations, The Journal of Conflict Resolution, 1968, Nr. 2, p. 159-181 ; and Väyrynen, R., Stratification in the System of International Organizations, Journal of Peace Research, 1970, Nr. 4, p. 371-389.

(2) Rosenau, J., The Scientific Study of Foreign Policy, New York: Free Press, 1971, Chapter 5.

Ibid., World Politics, London: Collier McMillan Publishers, 1976, Chapter 2.

cusses the clusters of potentially relevant sources of foreign policy which are considered most important for explaining why nations do what they do in world politics. In Table II-1, Rosenau categorizes the potentially relevant sources which are assumed to exert influence on foreign policy orientations and on general international activities of states. This analytical framework of analysis puts our own study in its proper place.

Table II-1 Major Sources of Foreign Policy

Systemic aggregation continuum	Time continuum	
	Sources that tend to change slowly	Sources that tend to undergo a rapid change
Systemic sources	Size Geography	Great Power Structure Alliances Technology Situational Factors (external)
Societal sources	Economic Development Culture and Social Structure History	Situational Factors (internal)
Governmental sources		Moods of Opinion Political Accountability Governmental Structure
Idiosyncratic sources		Values, Talents, Experiences and Personalities of Leaders

Source : Rosenau, J., World Politics, London: Collier McMillan Publishers, 1976, p. 18.

Rosenau considers the 'size' factor as an important systemic source of foreign policy. In other words, the systemic role the small states see themselves playing in the international system, is assumed to be an important source in understanding their activities in international relations. Significant differences can be seen between large and small states as to the perception of the importance of various issues in world politics and the consequent actions of states. He argues that the size of a state partly determines its operational or salient international environment.

It is said that issues in international economics and politics which are of little or no interest to the small state will probably only form part of a general foreign policy position without any precise viewpoints on them. On the other hand, for those issues which are of direct importance to the small state, foreign policy will be very active. In short, small states, Rosenau argues, tend to be interested in a narrower range of foreign policy issues than larger countries, and primarily concerned with economic issues. Their operational international environment is said to be regional in scope. The interests of the big countries, on the other hand, are often global and their policy pursuits tend to consider the small countries within the context of their global commitments and interests. Keohane qualified this distinction, arguing that weakness may also create some bargaining assets for a small state (1). Its weakness can become a source of bargaining power if a big country perceives the territory of a small state or its position on an international issue of strategic importance. Constructive cooperation between states of different size may then be a better way to attain one's objectives. In other words, small states should understand their place in the international political and economic situation at any time and adapt themselves to it, while trying to maintain a maximum freedom of action. To take benefits from the systemic conditions of a system a country is subjected to and to act according to a given set of circumstances, implies an internationally oriented perspective.

In this context, Rosenau has advanced the thesis that the foreign policies of states should be viewed as 'adaptive behaviour' (2).

(1) Keohane, R.O., The Big Influence of Small Allies, Foreign Policy, Spring 1971-1, p. 161-182.

(2) Rosenau, J., Foreign Policy as Adaptive Behaviour, Comparative Politics, Vol.II, Nr.3, April 1970, p. 365-387.

The basic premise of the 'adaptive' foreign policy framework is that nations are seen as adapting entities which try to cope with internal and external changes and demands in order to keep the resulting fluctuations in the state's economic, political and physical structures within acceptable limits.

Other authors have elaborated on this particular path of analysis (1). Here, we only mention the link with our own study. This adaptive foreign policy framework stresses the importance of the organization and provision of international cooperation devices for small states. It is said that a small country may overcome some disadvantages of smallness by an active participation in the international system. We assert that the need for international interaction through cooperation among states is an important premise for our own analysis. It is along these lines that classification schemes of states should be interpreted. In the last section we discuss Keohane's systemic role classification of states as the most interesting one.

3. Keohane's Systemic Role Classification

a. Definition

Keohane has introduced a set of criteria for grouping states by size, which replaces the small-great dichotomy with a fourfold division. Instead of focussing on objective power sources or behavioural tendencies, Keohane stresses the systemic role states' leaders see their countries play in the international system (2).

From the perspective that systems can be classified as 'system-dominant' or 'subsystem-dominant', depending on the extent to which the system determines state behaviour, the author distinguishes four types of states. First, there are the 'system-determining' states. These states play a critical role in shaping the system (3). The imperial power in a unipolar system and the two great powers in the bipolar system are given as examples of this category.

(1) McGowan, P. and Gottwald, K., Small State Foreign Policies, International Studies Quarterly, Vol. 19, Dec. 1975, p. 469-495 ; Hansen, P., Adaptive Behaviour of Small States, in Sage International Yearbook of Foreign Policy, Vol. 2, 1974, Chapter 4.

(2) Keohane, R.O., Lilliputians' Dilemmas : Small States in International Politics, International Organization, Vol. XXIII, Spring 1969, p. 291-310.

(3) Ibid., op.cit., p. 295.

Secondly, there are the 'system-influencing' states. These are states "which cannot expect individually to dominate a system, but may nevertheless be able significantly to influence its nature through unilateral as well as multilateral action" (1).

The third category consists of 'system-affecting' countries. These states "cannot hope to affect the system acting alone, but may nevertheless exert significant impact on the system by working through small groups or alliances of through universal or regional international organizations" (2).

Finally, Keohane refers to the fourth category of states as system-ineffectual states. They "can do little to influence the system-wide forces that affect them, except in groups which are so large that each state has minimal influence and which may themselves be dominated by larger powers" (3). Their foreign policy is defined as mere adjustment to reality.

Keohane's four types correspond with the traditional distinction between great, secondary, middle and small powers. The United States and the Soviet Union are considered system-determining states ; the United Kingdom, France, West Germany, Japan, China and perhaps India system-influencing ; Canada, Sweden, Pakistan, Brazil, Argentina and comparable states system-affecting and a series of other states as system-ineffectual.

With Rothstein, Keohane agrees that the mere use of objective classification criteria is not sufficient. Because "objective reality does not determine statesmen's behaviour directly" (4), he adds a psychological dimension to his definition. He, therefore, proposes the following definitions : "A great power is a state whose leaders

(1) Ibid., op.cit., p. 295.

(2) Ibid., op.cit., p. 295.

(3) Ibid., op.cit., p. 296.

(4) Ibid., op.cit., p. 296.

consider it can, alone, exercise a large, perhaps decisive impact on the international system : a secondary power is a state whose leaders consider that alone it can exercise some impact, although never in itself decisive, on that system ; a middle power is a state whose leaders consider that it cannot act alone effectively, but may be able to have a systemic impact in a small group or through an international institution ; a small power is a state whose leaders consider that it can never, acting alone or in a small group, make a significant impact on the system" (1).

There can be discussion about the factual distinction of the definitions. Nevertheless, the emphasis on the perception of the systemic role as the criterion to classify states is quite a new and most promising element in the literature on small states. We will now briefly evaluate Keohane's classification scheme.

b. Evaluation

Keohane's classification contains interesting elements. It certainly helps to explain the behaviour of small states towards international cooperation. The author draws our attention to the fact that small states may promote rationally international interaction without believing that international organizations increase their security in specific ways or restrain big countries from particular actions. The leaders of small and middle states, Keohane argues, have realized that in many instances, although they may be able to do little together, they can do virtually nothing separately. Within a context of international cooperation, they can attempt to develop an international political and economic environment favourable to their objectives (2). In other words, Keohane correctly argues that many small and middle states perceive international organizations as a means to develop international attitudes and codes of proper behaviour. "Perception of its systemic role, more than the perception of the need for external aid in

(1) Ibid., op.cit., p. 296.

(2) Ibid., op.cit., p. 296.

security, seems to shape small powers' distinctive attitudes towards international organizations" (1).

Keohane's analysis is also extremely interesting and convincing in the light of Mancur Olson's application of the theory of collective action to the field of International Relations. We will return in great depth and length to Olson's approach in the next chapter. By linking the systemic role definition and the discrepancy in contributions between small and big states to a military alliance Keohane touches upon the cooperative game among states within the framework of a military alliance and consequently, upon Olson's analysis. In their 'Economic Theory of Alliances' (2), Olson and Zeckhauser showed that this discrepancy may work to the benefit of the small states.

Compared with classification schemes based on objective power sources or on differences in security capability, Keohane has differentiated more clearly between states as to their behaviour in the international system. His systemic role classification adds some more explanatory power to an analysis of the behaviour of small states in the international system. In short, Keohane does not content himself with a mere descriptive pattern of power relations among states as most classification schemes have done.

However, the systemic role definition tends to neglect the dynamic and very flexible element in all international interaction and does not integrate sufficiently the consequences of changes of the system in its application field. It seems to consider the international system too much as a static and global framework in which states follow certain pre-determined automatisms. This lack of dynamic elements has been corrected to some extent in 'Power and Interdependence' (1977) in which declining leadership has been analyzed in different systems and subsystems.

(1) Ibid., op.cit., p. 297.

(2) Olson, M. and Zeckhauser, R., An Economic Theory of Alliances, Review of Economics and Statistics, Vol. 48, August 1966, p. 266-279.

In the light of our own research Keohane's taxonomy is considered the most interesting classification scheme. It provides us with a useful framework to analyze the behaviour of small states towards international cooperation. The operational definition makes it possible to understand the reasoning of many policies that countries pursue in the international system. In our further study, Keohane's systemic role definition of small states as 'system-takers' will be used.

Conclusion

The primary purpose of this chapter was not a thorough discussion of the literature on small states, but a brief summary of the attempts to identify 'small states' in International Relations. We hoped to find a useful framework in which the behaviour of 'small states' towards cooperation could be analyzed.

A number of conclusions can be drawn from this summary. Most of the literature seems rather naive and does not provide useful analytical tools to study the behaviour of states towards international cooperation. Most classification schemes are related to a domain of International Relations, i.e., the analysis of power relations among countries, which does not form part of our own study. Here, we are only interested in a subset of International Relations, i.e., an analysis of the behaviour of states towards international cooperation.

Many concepts in International Relations have a rather diffuse content. The notion of 'small state' is no exception. The summary clearly indicates the difficulty of classifying countries in operational categories. An obvious difficulty is that 'small' and 'large' are relative concepts subject to great differences in interpretation.

In fact, what would be needed is a theoretical term 'small state', depending on the problem at stake. The literature considered is proceeding by a method of abstraction or generalization instead of defining its terms in a theoretical way. In the International Economics' theory, particularly in the theory of international trade, the category of 'small states' has been studied with the use of the small-country assumption. The reasoning goes that small countries have an economic incentive to cooperate in the international system. The economic concept of a 'small state' is well defined, i.e., a price-taker on the international markets. Keohane's theoretical discussion of the systemic role definition of a 'small state' as a

system-taker, i.e., a state which is not capable of influencing matters in the international system, seems quite analogous to the economic concept of 'small state'. Therefore, Keohane's classification scheme is taken as the framework for our analysis.

To sum up, although the term 'small state' may be a vague analytical concept, there is still reason to be interested in the category of 'small states' (1). In the further course of the study, the size of a country will thus be considered as a datum which is assumed to exert influence on the behaviour of states towards international cooperation. Both concepts of a small state, i.e., a price-taker and a system-taker, indicate the logic for collective action towards international cooperation.

(1) Baehr, P.R., Small States : A Tool for Analysis?, World Politics, Vol. 27, 1974-1975, p. 56-466.

The problems of operational concepts in social sciences are very well expressed by Machlup, F., Operationalism and Pure Theory in Economics, in Krupp, S.R., The Structure of Economic Science, Englewood Cliffs, New York: Prentice Hall, Inc., 1966, p. 56 : "It is one of the commandments of operationalism that the propositions which form a theory should be composed of operational concepts. Unfortunately, 'theories' made of such material are only what some philosophers have called 'low-level generalizations', or 'statements of empirical uniformities and regularities'. The 'general theories', the 'high-level generalizations of a theoretical system', from which any number of propositions about all sorts of relationships can be deduced are made of different stuff".

CHAPTER III THE PUBLIC GOODS THEORY OF MANCUR OLSON : CONTENTS, DEVELOPMENTS AND APPLICATIONS

Introduction

The third chapter explores the problem of collective action through an analytical perspective derived from the theory of collective goods. The collective goods theory deals with the conditions under which individuals or groups, often joined in voluntary organizations, can coordinate their actions to achieve common benefits. The theory is most relevant in systems characterized by a low level of organization in which no coercion or exclusion is possible.

We may briefly say what is meant by a public (or collective) good (1). According to the standard distinctions, collective goods are defined by two properties, one of which is non-rivalness, meaning that each individual's consumption does not diminish the supply available to others. The other property is called non-exclusion, i.e., once a good is provided, it is not economically feasible to prevent individuals from enjoying the benefits of the good. We refer to the next chapter for a discussion of these definitions and subsequent problems.

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- (1) The relevant literature on this subject dates back many years. Nonetheless, economic analysis of the collective goods took an important turn when Samuelson, P., published 'The Pure Theory of Public Expenditure', Review of Economics and Statistics, Vol. 36, November 1954, p. 387-389. He gave a graphical presentation of the collective goods problem in 'Diagrammatic Exposition of a Theory of Public Expenditure', Review of Economics and Statistics, Vol. 38, November 1955, p. 350-356. Additional work has since been done on several aspects of the concept. In this context we mention especially the excellent article by Head, J., Public Goods and Public Policy, Public Finance, Vol. 17-3, 1962. See also Buchanan, J., The Demand and Supply of Public Goods, Chicago: Rand McNally, 1968.

The theory of collective goods, developed in detail by economists, has also made some interesting contributions to specific areas of political analysis (1). Interest in the theory of collective goods has been increasing among political scientists since the publication of Olson's 'The Logic of Collective Action' (2). Drawing on developments in the theory of collective goods by Samuelson and others, Olson shows how his theory can be used to analyze the formation of voluntary associations in both domestic and international politics. Olson and other scholars have applied the theory of public goods to political topics such as interest groups, alliances and the organization of local governments.

In the application of the collective goods theory to International Relations, the focus is on the problems of collective action which the collective goods may create at the international level. "In economic terms, when (nation-states) are unable to 'purchase' a desired capability, such as an effective deterrent in the international marketplace, they are forced to seek an alternative arrangement to generate that resource. This predicament presents states with a political problem. How can a situation best be structured to facilitate optimal production of the desired good at lowest cost? What strategies can be employed to ensure maximum participation with the lowest potential for conflict?" (3)

In this introductory section we briefly mention some of the appealing characteristics that a public good perspective to the analysis of political phenomena may generate. A first indicative point of such an approach is that the defining characteristics of public goods highlight existing political, social and economic relationships. Collective goods concepts have become useful to the extent that they identify the nature and the consequences of collective goods situations. In

(1) Hanson, R.A., Toward an Understanding of Politics through Public Goods Theory : A Review Essay, in Loehr, W. and Sandler, T., Public Goods and Public Policy, Beverly Hills, Ca.,: Sage Publications, 1978, p. 67-95.

(2) Olson, M., The Logic of Collective Action : Public Goods and the Theory of Groups, Cambridge: Harvard University Press, 1965.

(3) Russett, B.M. and Sullivan, J., Collective Goods and International Organization, International Organization, Vol. 25, Autumn 1971,

sum, the concept of public good has drawn the attention to certain features of political variables that simply were not considered previously. As a consequence, the concept appears to be a tool to shed light on some traditional political concerns and to uncover some new problems (1).

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- (1) The potential significance of the concept is revealed by the activities to which the term refers. Historically, many studies have concentrated on an analysis of 'defence' as a public good : Beer, F., The Political Economy of Alliances : Benefits, Costs and Institutions in NATO, Beverly Hills, Ca.: Sage Publications, 1972 ; Burgess, P.M. and Robinson, J.R., Alliances and the Theory of Collective Action, The Midwest Journal of Political Science, Vol. 13, May 1969, p. 194-218 ; Olson, M. and Zeckhauser, R., An Economic Theory of Alliances, Review of Economics and Statistics, Vol. 38, August 1966, p. 266-279 ; Russett, B.M., What Price Vigilance?, New Haven: Yale University Press, 1970 ; Sandler, T., The Economic Theory of Alliances : Realigned, in Liske, C., Loehr, W. and McCamont, J. (eds.), Comparative Public Policy : Issues, Theories and Methods, Beverly Hills, Ca.: Sage Publications, 1975, Chapter 9 ; Ibid., Impurity of Defense : An Application to the Economics of Alliances, Kyklos, Vol. 30, 1977, p. 443-460 ; Sandler, T. and Cawley, J., On the Economic Theory of Alliances, The Journal of Conflict Resolution, Vol. 19, June 1975, p. 330-356 ; Starr, H., A Collective Goods Analysis of the Warsaw Pact after Czechoslovakia, International Organization, Vol. 27, 1974, p. 521-532 ; Van Ypersele de Strihou, J.M., Sharing the Defense Burden Among Western Allies, Yale Economic Essays, Vol. 8, Spring 1968, p. 261-320 ; Vaïrynen, R., The Theory of Collective Goods, Military Alliances and International Security, International Social Science Journal, Vol. 28-2, 1976, p. 288-305 ; Wagner, H.R., National Defense as a Collective Good, in Liske, C. and other (eds.), Comparative Public Policy : Issues, Theory and Methods, Beverly Hills, Ca.: Sage Publications, 1975, Chapter 8.

We only mention a few other recent applications as examples : Baumol, W.J. and Oates, W., The Theory of Environmental Policy, Englewood Cliffs, N.Y.: Prentice Hall, Inc., 1975 ; Bobrow, D.B. and Kudrle, R.T., Energy R&D : in tepid pursuit of collective goods, International Organization, Vol. 33-2, Spring 1979, p. 149-175 ; Buchanan, J., The Limits of Liberty : Between Anarchy and Leviathan, Chicago, London: Chicago University Press, 1975 ; Cohen, B.J., Organizing the World's Money : the Political Economy of International Monetary Relations, London: The McMillan Press, 1977 ; See the different writings of Hamada, for e.g., Hamada, K., On the Political Economy of Monetary Integration, in Aliber, R.Z. (ed.), The Political Economy of Monetary Reform, Chicago: Chicago University Press, 1977 ; Hirsch, F. and Doyle, M. and Morse, E., Alternatives to Monetary Disorder, New York: McGraw-Hill, 1977.

A second striking feature of the public good theory is that it promises to be an explanation of some political problems superior to previous theories . Two notable applications that have seriously questioned established theories, are Olson's analysis of groups and Ostrom's account of the organization of local governments. Concerning the question of whether or not individuals will join groups in order to supply themselves with a collective good, Olson questiones the traditional argument that rational individuals will seek to further their individual interests by joining a group that seeks to promote the common interests of all individuals. Instead, Olson advances the counter assertion that aslong as a potential group member can receive the benefits of a good without contributing to its supply, he has an incentive to withhold his contribution. Emphasis is put on the difficulties arising from the free-rider problem and tendencies for the supply of the goods to be sub-optimal. A key distinction is made between large groups and small groups. The argument leads to the conclusion that the provision of collective goods to large groups is a major political problem. In the next section we will explain the content of Olson's theory of collective goods.

Concerning the organization of local governments, V. Ostrom and others (1) challenge the conventional wisdom that seeks to change the structure of multiple units of government to greater centralization of policy-making authority to increase policy effectiveness and efficiency. They argue that the configuration of local units of government actually reflects the preferences of citizens for public goods and that it is efficient for those units to contract for

(1) Among the many contributions to this field of analysis, we mention a few works : Bish, R.L., The Public Economy of Metropolitan Areas, Chicago: Rand McNally, 1971 ; Bish, R.L. and Ostrom, V., Understanding Urban Government, Washington D.C.: American Enterprise, 1973 ; Ostrom, V., Tibout, C.M. and Warren, R., The Organization of Government in Metropolitan Areas, American Political Review, Vol. 55, December 1962, p. 831-842 ; Ostrom, V. and Ostrom, E., Public Choice in Public Agencies, Indiana: Indiana University Press, 1976.

the supply of public goods with competitive producers. We refer to the specialized literature on this subject.

Another appealing quality of the public goods theory is that it may be applied to a variety of political decision-making problems. As a result, it can lead to the development of new theories rather than being limited to refuting political theories. Analyses which are concerned with the supply of collective goods instead of with the interactions among prospective consumers of any given public good, indicate this new direction. The whole discussion of leadership models from the public goods perspective seems a promising path of analysis (1).

To sum up, the theory of public goods is appealing to the extent that some political variables can be treated as public goods, that a number of political problems involve questions of the demand and supply of public goods, and that some political processes and outcomes can be explained by abstract models that generate principles

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- (1) Frohlich, N. and Oppenheimer, J.A. and Young, O.R., Political Leadership and Collective Goods, Princeton: Princeton University Press, 1971. They propose an 'entrepreneurial' theory in which political leaders supply collective goods in order to maximize their leaders' surplus.

Prior to the work of Frohlich and others, there were made two efforts to extend Olson's theory by adding the component of leader (or entrepreneur): Salisbury, R.H., An Exchange Theory of Interest Groups, Midwest Journal of Political Science, Vol. 13, February 1969, p. 1-32 ; and Wagner, R.E., Pressure Groups and Political Entrepreneurs, Papers on Non-Market Decision-Making, Charlottesville, Virginia: University of Virginia, 1966, p. 161-170.

Kindleberger, C.P., Systems of International Organization, in Calleo, D.P. (ed.), Money and the Coming World Order, New York: New York University Press (The Lehrman Institute), 1976 ; Kindleberger, C.P., Dominance and Leadership in the International Economy : Exploitation, Public Goods, and Free Rides, in Hommage à François Perroux, Grenoble: Presses Universitaires de Grenoble, 1978.

An interesting and promising attempt in this respect is also Salmon, P., Exchange Models of Leadership, unpublished paper, Firenze: European University Institute, March 1979.

of behaviour. The descriptive and analytical utility of a collective goods approach may thus lead to a clearer idea of the policy intervention possibilities that exist in any problem. The many applications of the collective goods theory to different areas shows a growing importance. We now turn to an exposition of Olson's initial analysis, further developments and applications of the theory of collective goods.

A. The Collective Goods Theory of Olson : Contents

1. Theory Construction

The previous section contained some of the reasons why the concept of public good looks appealing for further application. These applications, which can best be arranged according to the areas of theory-building and theory-testing, are devoted to different substantive issues, e.g., special interest groups, leadership and local government organization.

Drawing on the economic theory of public goods, Olson developed a theory of collective action, designed to explain how groups and organizations operate. This theory of collective action that applies most generically to voluntary associations is also applicable to international organizations. In voluntary associations as well as in international organizations, there is no overarching institution with taxing capacity to compel potential users to support the production of the collective benefits. In other words, there is no coercion and no exclusion possible. Because of this similarity between international organizations and special interest groups, attention will be concentrated on Olson's theory of collective action. In this chapter we will explicate this theory, its further developments and its criticisms.

a. The Relationship between Groups and the Collective Good

A fundamental problem confronting individuals (or countries), is the decision whether or not to join a group that seeks to achieve the common interests of the group members. Considerable importance has been attached to the role of groups in both domestic and international politics. In domestic systems, special interest groups such as labour unions or farm organizations serve as mouth-piece of the demands of their members. And in the international

system, countries may promote their joint interests, e.g., defence, through alliance formation. Despite this critical role of groups, the application of the concept of public good indicates that individuals (or countries) will not necessarily act to further their mutual concern.

Olson defines collective goods in the following manner :
"A common, collective, or public good is here defined as any good such that, if any person X_1 in a group $X_1, \dots, X_1, \dots, X_n$ consumes it, it cannot feasibly be withheld from the others in that group" (1). A direct consequence of this definition of a collective good is the 'free-rider' problem. "To the extent that the good is collective in nature, it is possible for individuals to receive it, even if they do not contribute towards its supply. Consequently, individuals acting in a self-interested fashion, will experience incentives to withhold their own contributions, hoping that the efforts of others will be sufficient to provide the good for the whole group" (2).

In his book, Olson states that the "characteristic and primary function of organizations is to advance the common interests of groups and individuals" (3), e.g., some collective good is afforded to a special group of actors. That implies that if the achievement of any common goal or the satisfaction of any common interest means that a public good has been provided for that group, then the factors that work against the supply of public goods, apply to the formation of voluntary groups. In other words, the very fact that a goal or purpose is common to a group does not mean that a collec-

(1) Olson, M., The Logic of Collective Action : Public Goods and the Theory of Groups, Cambridge: Harvard University Press, 1965, p. 14

(2) Frohlich, N. and others, Political Leadership and Collective Goods, Princeton: Princeton University Press, 1971, p. 13.

A more formal treatment of this problem is set forth in Frohlich, N. and Oppenheimer, J.A., I Get By With a Little Help from my Friend, World Politics, Vol. 23, October 1970, p. 104-120.

(3) Olson, M., op.cit., p. 10.

tive good will be provided, it only says that once a group is organized on a common interest, no one in the group is excluded from the benefit or satisfaction brought about by its achievement. From this it follows that the provision of public goods, together with the provision of economics of scale and of information, may be considered a fundamental function of groups and organizations. Hence, the traditional political problem of whether or not an individual (or a country) will either join or not join a group or organization, can be rephrased to the question : will an individual (or a country) voluntarily contribute to the supply of a public good.

b. Olson's Model of Groups or Organizations

b.1. General

In the application of the public goods theory to this question, Olson argues that "unless the number of the individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests" (1). He goes beyond this conclusion and formulates a mathematical model of nonexcludable goods in which group size plays an important role.

Olson's model includes the following variables :

C = the cost of the collective goods to individual i

S_g = the size of the group

T = the amount of the collective goods that is supplied

$V_g = S_g T$ = the value or benefit of the good to the group

V_i = the gain of the good to individual i

$F_i = \frac{V_i}{V_g}$ = the proportion (fractional share) of the group benefit, consumed by individual i

$A_i = V_i - C$ = the advantage of individual i

(1) Olson, M., op.cit., p. 2.

The crucial assumptions in Olson's model are : 1) Every individual attempts to maximize his advantage, i.e., the difference between the benefit of the good to him and the total cost. This means that the individual believes that no one else will contribute to the supply of the good, that he will have to pay the full cost. There is no 'cost-sharing' arrangement. 2) The cost and benefit curves are continuous and well-behaved, i.e., they produce a unique maximum advantage. 3) The value of the good to the group is the product of the size of the group and the amount supplied.

Using these assumptions, Olson demonstrates that 1) if the good is supplied at all, it will be supplied at a suboptimal level ; 2) the degree of suboptimality of supply is a function of the size of the group ; and 3) in small-sized groups, the individuals who receive a greater fractional share of the value of the good, will bear a disproportionate share of the burden supplying the good.

b.2. Specifics

b.2.a. The Relationship between Group Size and the Provision of Collective Goods

How does Olson obtain these results (1)? Because of the assumptions about the continuity and shape of the cost and value functions, he is able to identify the condition under which an individual maximizes his net utility by purchasing some amount of the public good. That condition exists when $\frac{d(A_i)}{dT} = \frac{d(V_i - C)}{dT} = 0$ or $\frac{dV_i}{dT} = \frac{dC}{dT}$, i.e., the amount of the good supplied by the individual i will be at that point where the marginal cost equals the marginal value for individual i . The Pareto optimal level, however, will occur at that point where the marginal cost equals the marginal value for the group ($\frac{dV_g}{dT}$). But since the individual value is a constant fraction of the

(1) For an interesting examination of Olson's theory of collective action, see Hart, J.A. and Cowhey, P.F., Theories of Collective Goods Reexamined, Western Political Quarterly, Vol. 30-3, p. 351-362.

collective value ($F_i = \frac{V_i}{V_g}$), the amount supplied by any individual will always be suboptimal.

Olson further argues that because F_i decreases as the size of the group increases, the supply of the collective good becomes smaller and more suboptimal. He asserts that "the larger a group is, the farther it will fall short of providing an optimal supply of any collective good, and the less likely that it will act to obtain even a minimal amount of such a good. In short, the larger the group, the less it will further its common interests (1)".

His conclusions concerning the effects of group size relate to both the absolute and the relative amount of the collective good that is provided. They are as follows : 1) As the size of the group increases, the actual amount of the public good supplies decreases. 2) As the size of the group increases, the amount of the good supplied becomes more suboptimal. These conclusions assert that, other things being equal, small groups will fare better than large groups in both actual and relative performance in providing collective goods (2).

In the context of this relationship between the size of the group and the provision of the public good, Olson distinguishes three kinds of groups (3) : 1) A 'privileged' group is a group in which a member gets such a large fraction of the total benefit that he has an incentive to see that the collective good is provided, even if he has to bear the full burden of providing it himself. The collective good is presumed to be obtained. 2) An 'intermediate' group is a group in which no single member gets such a large benefit

(1) Olson, M., op.cit., p. 36.

(2) The arguments are well explained in Olson, M., A Theory of Groups and Organizations, in Russett, B.M., Economic Theories of International Politics, Chicago: Markham Publishing Company, 1968, p. 139-147.

(3) Olson, M., The Logic of Collective Action : Public Goods and the Theory of Groups, Cambridge, Ma.: Harvard University Press, 1965, p. 44.

from the collective good that he has an incentive to provide the good himself, but in which the individual is still so important in the group that his contribution to the group objective has a noticeable effect on the costs or benefits of others in the group. The result is indeterminate so that provision of the collective good will depend on coordination among the interested actors.

3) The 'latent' group is a large group in which no single individual's contribution makes a perceptible difference in securing the collective benefit to the group. That is, each member will feel personally inefficacious because he concludes that the impact of his contribution will be insignificant. Accordingly, all members of the group will decide that it is irrational for them to contribute to the supply of the public good and the group will fail to supply itself with the good.

Marginal cost-sharing arrangements were suggested to overcome a suboptimality of supply (1). When there is such a marginal cost-sharing scheme, there need be no tendency towards disproportionality in the sharing of burdens. According to Olson, voluntary cost-sharing is most likely in groups in which there is 'a perceptible interdependence'. In the absence of such an interdependence coercion or 'selective incentives' may be necessary to get individuals to contribute to the supply of the good. He asserts that most large groups offer private goods or selective incentives to obtain sufficient levels of participation in collective efforts. However, the idea of marginal cost-sharing arrangements is not stressed in Olson's analysis. His main interest is in the calculus of the individual decision-maker to determine his contribution to the provision of the public good.

(1) The marginal cost-sharing arrangement is introduced as a device for overcoming suboptimality of supply in Olson, M. and Zeckhauser, R., op.cit., p. 270 ; and Olson, M., Increasing the Incentives for International Cooperation, International Organization, Vol. 25, Autumn 1971, p. 866-874.

b.2.b. Cost-sharing within Small-sized Groups

One of the conclusions of Olson's theory concerns the small-sized group. Apart from the basic claim about groups, i.e., the amount of a public good that is provided voluntarily will be sub-optimal, Olson also advances a proposition about the sharing of costs and benefits within small-sized groups. If the good is not a superior good, the distribution of the costs of supplying a public good will not be proportional to the distribution of the benefits of the good. Olson writes : "The suboptimality or inefficiency will be somewhat less serious in groups composed of members of greatly different size or interest in the collective good. In such unequal groups, on the other hand, there is a tendency toward an arbitrary sharing of the burden of providing the collective good. The largest member, the member who alone would provide the largest amount of the collective good, bears a disproportionate share of the burden of providing the collective good. The smaller member by definition gets a smaller fraction of the benefit of any amount of the collective good he provides than a larger member, and therefore has less incentive to provide additional amounts of the good. Once a smaller member has the amount of the collective good he gets free from the largest member, he has more than he would have purchased for himself, and has no incentive to obtain any of the collective good at his own expense. In small groups with common interests there is accordingly a surprising tendency for "exploitation of the great by the small (1)".

(1) Olson, M., The Logic of Collective Action : Public Goods and the Theory of Groups, Cambridge, Ma.: Harvard University Press, 1965, p. 35.

2. Theory Testing

Olson and Zeckhauser have tested the theory of collective action in international relations. In their 'Economic Theory of Alliances' the exploitation hypothesis was verified for the North Atlantic Treaty Organization (NATO). With the transposition of the analytical framework of the theory of groups and organizations to the level of international relations, they aimed at explaining the workings of any international organization.

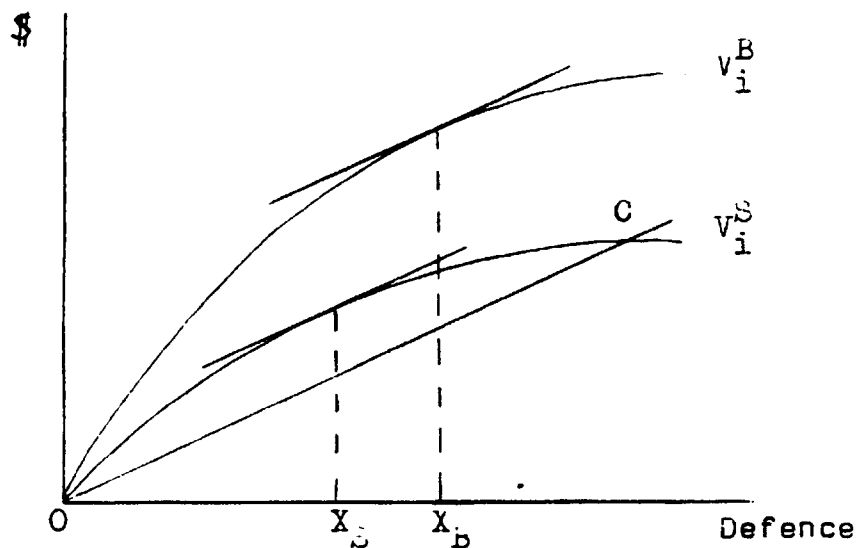
They argued that almost every sort of international organization provides collective goods, for they all have the purpose of serving the common interests of member states. As those goods and services which are provided in the common interest of the members of the group are usually called public goods, the analogy with an international organization is obvious. For instance, an organization of states allied for defence similarly produces a collective good. In the case of NATO, the proclaimed purpose of the alliance is to protect the member nations from aggression by a common enemy. Deterring aggression against any one of the members is supposed to be in the interest of all.

The arguments developed in 'The Logic of Collective Action', make them also assert that, when the membership of an international organization is relatively small, the individual members may have an incentive to make significant sacrifices to obtain the collective good, but still only suboptimal amounts of the good. There will also be a tendency for the larger members - those that place a higher absolute value on the public good - to bear a disproportionate share of the burden. In fact, Olson assumes that the absolute value for the public good is directly proportional to the size of the member.

Olson has shown graphically the disproportionality of the sharing of burdens in the figure that we have drawn below (Figure III-1). The figure depicts the support of two nations for alliance forces through independent contributions. Income-effects, i.e.,

the influence that the amount of non-defence goods a nation has already forgone in its desire to provide additional units of defence, are not taken into account by the authors.

Figure III-1 Evaluation Curves
(Small Country-Big Country)



Source : Olson, M. and Zeckhauser, R., op.cit., p. 269.

The vertical axis measures benefits and costs in a common metric such as dollars. The horizontal axis of the figure measures the quantity of the collective good that the alliance provides. The C curve denotes the total cost of providing defence capability to each nation. The V_i^B curve denotes the value of the collective good to the state that values it more highly and the V_i^S curve gives the same information for the state that puts the lower absolute value on the collective good. The larger nation has a steeper curve because it places a higher absolute value on defence.

In isolation, the larger nation will provide X_B of defence and the smaller nation X_S , for at these points their respective valuation curves are parallel to the cost function. If the two member states independently determine what contribution they will make to the alliance, the only equilibrium with independent determination is for the large country to provide X_B of the collective good and for the smaller country none at all. Clearly the large country maximizes the excess of benefits over costs by choosing to provide X_B of the collective good. But since the good is collective, it follows that this amount is also available to the small country. The benefit the small country would get from an extra unit of the collective good is less than the cost of a unit of the good. So it is not in the small country's interest to supply any defence whatever. Hence, Olson and Zeckhauser expect to find that the alliance members that place greater valuation on the defence objective, will bear a disproportionate share of the alliance's costs. There is thus a disproportionality in burden sharing that works against big countries.

To operationalize this model to the NATO context, the authors assume that the larger the nation is, the larger its proportion of resources devoted to defence expenditures will be. With GNP and defence expenditures as the indicators of size and effort, the model holds that the greater a nation's GNP, then the greater will be that percentage of GNP spent on defence. This relationship is verified in a test of five related hypotheses (1). According to Olson and Zeckhauser "all of the empirical evidence tended to confirm the model" (2).

(1) Olson, M. and Zeckhauser, R., op.cit., p. 274-277.

(2) Ibid., op.cit., p. 278.

Further empirical studies supported Olson's theory (1). They all tested the proposition according to which there is a tendency for the large countries to bear a disproportionate share of the burden. All found positive, statistically significant correlations between GNP(size) and the proportionate military expenditures (D/GNP) for a variety of time periods and data sources. Finally, all these studies have demonstrated that as an organization provides a collective good, members do indeed behave in ways indicated by Olson's theory of collective action.

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- (1) Empirical studies which confirm Olson's thesis are : Pryor, F., Public Expenditures in Communist and Capitalist Nations, Homeward, Illinois: Irwin Press, 1969, p. 96-98 ; Russett, B.M. and Starr, H., Alliances and the Price of Primacy, in Russett, B.M., What Price Vigilance?, New Haven, Connecticut: Yale University Press, 1970, p. 91-126 ; Starr, H., A Collective Goods Analysis of the Warsaw Pact after Czechoslovakia, International Organization, Vol. 27, 1974, p. 521-532 ; Van Ypersele de Strihou, J.M., Sharing the Defense Burden Among Western Allies, The Review of Economics and Statistics, Vol. 49, November 1967, p. 527-536.

Also Beer, F., tested Olson's model. He found it to be deficient in a number of respects : Beer, F., The Political Economy of Alliances : Benefits, Costs and Institutions in NATO, Beverly Hills, Ca.: Sage Publications, 1972.

B. The Collective Goods Theory of Olson : Critiques and Developments

1. Critiques of Olson's Theory of Groups and Organizations

While Olson is generally cited as having raised the question of how and why the size of a group affects the supply of a public good, the answer he provides us with in his theory of groups or organizations, is not universally accepted and often criticized in general and specific points. In fact, there is considerable disharmony in the answers that other scholars provide to the problem of the relationship between size and the supply of public goods. Some brief references to leading works in the field will serve to illustrate the widespread disagreement. Some of the conceptual and analytical problems related to the theory and its application to the field of International Relations are discussed at some length in the next chapter.

First, John Chamberlin (1) argues that even though large groups may experience a greater suboptimality of supply than smaller groups, the absolute level of supply may be greater, i.e., increases in group-size may positively affect the absolute level of public good. Chamberlin explicitly distinguishes two types of public goods in a manner originally set forth by Olson, who classified groups according to the types of collective benefits they generate for the members of the group (2).

An 'inclusive' public good is one that is perfectly indivisible, i.e., an individual's valuation of the good is not affected by the number of persons who consume the good (e.g., a decrease in the corporate income tax). An 'exclusive' good is one which is divi-

(1) Chamberlin, J., Provision of Collective Goods as a Function of Group Size, American Political Science Review, Vol. 68, June 1974, p. 707-716.

(2) Olson, M., op.cit., p. 36-42.

sible, but there is non-excludability. Here the satisfaction that any single individual receives from the good decreases as the number of persons consuming the good increases, and it is not feasible to restrict persons from enjoying the benefits (e.g., a price increase brought about in an industry through output restriction).

He concludes that in the case of 'inclusive' collective goods which are not inferior goods, the amount of the good provided does not increase but decreases as the size of the group gets larger. The relationship between groupsize and the amount of the good provided is in this case the opposite of Olson's prediction. According to Chamberlin, the differentiation between inclusive and exclusive collection goods has an important impact on the use of the 'fraction of the total benefit's concept' and consequently, on the explanations of actions by large groups (1).

Frohlich and Oppenheimer (2) reject Olson's overall conclusion that group-size predicts the amount of the good that will be supplied voluntarily. They argue that rational self-interested behaviour on the part of individuals does not suffice to provide increasing free-rider problems with increasing size. In other words, the relationship between group-size and the occurrence of the free-rider problem is not seen as a logical consequence of rational, self-interested behaviour. This was shown by abstracting each individual from the set of the group and examining his decision process. They assume that people are able to make subjective estimates of the probabilities associated with varying levels of contribution from other people and decide whether to contribute accordingly. The

(1) Chamberlin, J., op.cit., p. 715.

(2) Frohlich, N. and Oppenheimer, J.A., I Get by With a Little Help from my Friends, World Politics, Vol. 23, October 1970, p. 104-120.

ability of self-interested, rational individuals to supply themselves with a public good depends on some sort of mechanism to coordinate their expectations regarding the probable actions of others to contribute. In the absence of such a mechanism, they conclude that the difference between small and large groups do not produce different levels of public goods. Frohlich and Oppenheimer's rejection of Olson's theory resulted in a model of leadership which we will discuss in the next section.

Olson's conclusion that the size of the group affects the degree of suboptimality, is challenged by Riker and Ordeshook (1). They assert that this conclusion does not follow from the explicit components of the model. Contrary to Olson's arguments, Riker and Ordeshook argue that in the case of a pure public good the relationship between an individual's marginal benefit and marginal cost is unaffected by groupsize.

To sum up, the conflicting nature of the different conclusions concerning the effects of group-size on the provision of a collective good presumably results from a broad range of variable conditions and concepts. In other words, different assumptions are often used in the respective theories of group formation. Given the basic variable conditions, it is not surprising that Olson, Frohlich and Oppenheimer, Chamberlin, and Riker and Ordeshook reach different conclusions concerning the effects of group-size.

2. Further Developments of Olson's Theory of Groups or Organizations

a. A Deductive Model of Leadership

Out of Frohlich and Oppenheimer's criticism on Olson's treatment of groups and organizations Frohlich, Oppenheimer and Young developed a model in which they introduce the concept of 'political leadership' or 'political entrepreneurship' (2). They argue that,

(1) Riker, W.N. and Ordeshook, P.C., An Introduction to Positive Political Theory, Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1973, p. 72-74.

(2) Frohlich, N. and others, op.cit., p. 18-25.

if individuals are rational and self-interested and the provision of a collective good requires an organization, collective goods can be supplied even in large groups by someone who finds it profitable to set up an organization, collect resources, and supply the goods.

A political leader or entrepreneur is then defined as "an individual who acts to supply a collective good without providing all of the resources himself ... Such an individual will find this role valuable when the total resources he can collect as a leader exceed his costs, thereby producing a leader's surplus" (1).

Frohlich and others criticized Olson for suggesting that private good incentives or coercion can be used to provide a collective good or to increase the level of the supply of the good. They counter-asserted that political leaders may supply public goods in order to maximize their leader's surplus. In other words, these political leaders control production units and provide consumption units for their clients in exchange for donations and taxes. Political competition provides a check against exploitation by leaders. This reformulation of the collective goods problem leads them directly to an analysis of political organizations. They have formalized their model (2). It basically consists of two expected utility equations, one applies to the individual citizen and the other to the leader.

However, this deductive leadership model does not challenge the basic assumptions of Olson's theory. Frohlich and others misinterpreted Olson's model of collective action. Olson's model assumes no overarching capacity to compel people to support the production of the collective good. Frohlich and others, on the other hand, implicitly assume coercion or an institutionalized framework for the provision of collective goods. In other words, we do not have to be concerned with their criticisms of Olson's theory. As a concluding remark, we may even add that so far criticisms along those lines have not really damaged Olson's model. In the next chapter

(1) Frohlich, N. and others, op.cit., p. 6.

(2) For a mathematical form of the model, see Frohlich, N. and others, op.cit., p. 26-44.

we will see that the main problems for Olson's theory come from the notion of public good, i.e., the cases of mixed public goods where exclusion is possible.

b. Elaborations of Olson's Collective Goods Theory in International Relations

A number of theorists have accepted the logic of the formulation of Olson's theory of groups and organizations as the basis for elaboration of the theory in the field of International Relations. Russett and Sullivan have explored the problem of collective action through an analytical perspective derived largely from this theory of collective goods (1). Using Olson's discussion as a point of departure, they analyze a number of implications of the collective good principle in international relations. They are primarily concerned with a discussion of the conditions for the achievement of collective goods, and propose various strategies that can be employed by states in deliberate attempts to generate a collective good (2). A rapid tour of these conditions may indicate the way Russett and Sullivan have interpreted Olson's arguments.

Russett and Sullivan's first condition is that of 'coercion' of group members to make them pay their share of the costs. Other conditions relying on some sort of coercion include number four, where the small size of a group makes a member's contribution more visible, number six, where social pressure is seen as a means to 'encourage' members to contribute, and condition number nine, where the collective good may be provided as a result of education or propaganda.

Emphasis on the more positive incentives to provide public goods is put in the other strategies. Rewards are explicitly discussed in condition number five, suggesting the "provision of private goods to members as an inducement to states to join and to bear their share of the burden in achieving collective goods" (3) ; and in

(1) Russett, B.M. and Sullivan, J.D., Collective Goods and International Organization, International Organization, Vol. 25, Autumn 1971, p. 845-865.

(2) Ibid., op.cit., p. 850-859.

(3) Ibid., op.cit., p. 855.

number seven, where the collective good is provided as a 'by-product' of members' activities to obtain private goods. Other positive strategies for changing preferences include condition number two, which calls for a widening of the individual's perceived self-interest and number three, where the collective good is provided by Olson's privileged group. Condition ten involves the possibility of a 'prominent solution' of fair contributions such as, for instance, the scale of assessments which is employed to determine the contributions of members in international organizations. Finally, condition number eight suggests a federated structure of small groups. This last condition is a structural one, containing elements of both coercion and positive incentives.

Finally, in their application of the collective goods principle to international relations, Russett and Sullivan only focus on the creation of incentives and disincentives which stimulate the provision of collective goods through collective action, and not to the question how patterns of international organization and cooperation that could help to improve the working of the international system could be in practice attained. In other words, they were looking for means of mobilizing the 'latent' group. That is why they stress in the conclusion that more attention should be paid to ways in which the rewards for cooperative behaviour in international relations can be made stronger and more apparent (1).

A similar argument has been developed by Hardin and Baden throughout a recent collection of articles, 'Managing the Commons' (2). The 'tragedy' of the commons, stemming from individuals exercising rights unmatched by corresponding responsibilities, leads

(1) A good example is Hirsch, F., Doyle, M. and Morse, E., Alternatives to Monetary Disorder, New York: McGraw Hill, 1977.

(2) Hardin, G. and Baden, J. (eds.), Managing the Commons, San Francisco: W.H. Freeman, 1977.

See also Hardin, G., The Tragedy of the Commons, Science, Vol. 162, December 1968, p. 1243-1248 ; and Morse, E.L., The Global Commons, Journal of International Affairs, Vol. 31-1, Spring-Summer 1971.

to irresponsible behaviour and ultimately to the destruction of the commons. Hardin's response to the traditional tragedy of the common's irresponsibility is the 'enclosure' process. Responsible behaviour can be reintroduced, Hardin argues, by breaking up the commons into smaller pieces. The various global common pool resources can still be protected by international organizations vested with some coercive power. In other words, the 'enclosure' process means a suppressing of externalities by internalization so that the collective good disappears.

In a comment to Russett and Sullivan's article, Olson elaborates on the question of suboptimality of the provision of collective goods within international organizations (1). He focusses his attention more directly on conditions which enable the organized or cooperative effort in international organizations to approach an optimal level of activity i.e., what are the conditions under which independent countries will do what is needed to carry formal organization to a more nearly optimal amount of the collective good.

Olson discusses two polar cases of how international cooperation can take place. First, international cooperation can take place through 'independent contributions'. In this case states agree in principle to cooperate for some specified purpose or purposes and then individually determine the extent of that cooperation. In 'The Logic of Collective Action' and in the articles on alliances written by R. Zeckhauser and M. Olson, it has been set out that an organization supported through independent contributions, will not provide an optimal level of the collective good for which it is expected to be responsible, and that the organization will increasingly fall short of that amount as the number of members increases. The other striking point in their analysis is what Olson has called 'the exploitation of the great by the small', the disproportionality in burden-sharing that works against the big countries.

(1) Olson, M., Increasing the Incentives for International Cooperation, International Organization, Vol. 25, Autumn 1971, p. 866-874.

The other polar case is that of 'marginal cost-sharing', which is defined as "a system whereby the members of an international organization share the sacrifices needed to provide at least marginal units of a collective good in the same proportion in which they share the benefits of the additional units, while simultaneously working out the level of provision and each member's contribution" (1).

Such a voluntary marginal cost-sharing arrangement is difficult to attain for large groups. It becomes feasible when the number of the members of the organization is limited. Olson and Zeckhauser mentioned the case of infrastructure expenditures for NATO. Also the scale of assessments applied in the United Nations and some other international organizations to determine the contributions of the members faintly approximates this marginal cost-sharing approach. Olson introduced this marginal cost-sharing arrangement as a possible way of getting a more nearly optimal level of provision of a collective good.

However, the main focus of Olson's theory of collective action centers on the case of 'independent contributions'. The real issue of his model is an independent provision of the public good in a situation of no organizational framework, i.e., the calculus of the individual decision-maker to decide his contribution to the provision of the public good. To increase the level of provision of the public good in a situation of 'independent contributions', Olson argues, one has to increase the incentives for international cooperation. "Only arrangements designed to give individual states an incentive to act in their common interest, can bring a collectively sane result" (2). In other words, if collective goods are considered of importance in international relations, it might be feasible to increase the incentives for collectively rational behaviour.

In 'Collective Goods and International Cooperation', William Loehr criticized the public goods approach to the analysis of the behaviour of international organizations (3). He proposed a different model

(1) Ibid., op.cit., p. 871.

(2) Ibid., op.cit., p. 873.

(3) Loehr, W., Collective Goods and International Cooperation : Comments, International Organization, Vol. 27, 1973, p. 421-430.

and suggested that the theory of private goods could provide a practical means to obtain collective goods.

The model differs from that employed by Olson on several points. First, it can include income effects. Secondly, the model includes reference to private goods so that opportunity costs can be taken into account. Finally, Loehr does not assume equal tastes nor equal production costs of the goods. Conceptual and analytical ambiguity within his own reasoning makes him conclude that an optimal balance of public goods can be reached through international trade. According to Loehr, a country with the comparative advantage in the production of the public good, will become increasingly specialized in the production of that good and will be compensated in the form of private goods from its trading partner. A Pareto optimal balance of private and public goods is thus examined within a trading situation. He then concludes that international organizations are only necessary to ensure that the collective good is supplied in optimal amounts. At this point Loehr refers to and criticizes the conclusions of Russett and Sullivan, and Olson concerning the actual and relative amount of the provision of the public good.

It is rather difficult to compare both models when they use different basic assumptions in their reasoning. Moreover, Loehr's criticism of Olson's model can be questioned from an analytical and conceptual viewpoint. Here we only conclude that Loehr's criticisms have not damaged Olson's theory at all.

An author who has elaborated on the basis of Olson's theory, is Todd Sandler. In his realigned economic theory of alliances, Sandler discusses the question of suboptimality of the provision of the defence good (1). In his elaborative model, Sandler assumes a framework of exclusion, moving him away from Olson's basic model. He introduces taxing schemes for the purpose of inducing Pareto optimal resource movements within alliances. Taxation is seen to promote stability by

(1) Sandler, T., The Economic Theory of Alliances : Realigned, in Liske, C., Loehr, W. and McCamant, J. (eds.), Comparative Public Policy : Issues, Theories and Methods, Beverly Hills, Ca.: Sage Publications, 1975, p. 223-239.

allowing all allies to gain from the alliance, whereas prior to taxation only smaller nations gained in many instances. He has thus examined the stability of alliances with respect to the level of economic welfare of the participant. In absence of a taxing scheme, Sandler's model indicates that the stability of an alliance may depend on the relative sizes of the allies confirming Olson's conclusions. With the introduction of a taxing scheme the stability of the alliance may be increased. To resume, Todd Sandler's realigned economic theory of alliances does indicate that the relative sizes of allies are instrumental in determining alliance stability, but also introduces the coercive means of taxing to provide and increase the collective good of deterrence within the alliance.

Sandler has also discussed the use of the pure public good concept to the study of alliances. Traditionally, defence has been used to exemplify a pure public good exhibiting non-rivalness and non-exclusion properties. This is, however, a polar case. Sandler has attempted to remedy that by investigating the implications of an impure public good paradigm of an alliance structure (1). The impure public good aspects of defence are analyzed by distinguishing defence goods according to their deterrent and protective content.

Sandler introduces two formal models of a military alliance based upon the sharing of an impurely public defence good. Model I examines defence as an impure public good and is applicable to an alliance that relies on conventional weapons of protection. In Model II, the joint product model, Sandler includes private defence benefits and produces conclusions regarding optimal alliance size, financing, stability and burden-sharing that significantly differ from the conclusions of the pure public good model. To sum up, Sandler, taking Olson's 'Economic Theory of Alliances' as a starting point, has tried to elaborate more realistic models in which international organizations that share public and private goods, can be examined.

(1) Sandler, T., Impurity of Defense : An Application to the Economics of Alliances, Kyklos, Vol. 30, 1977, p. 443-460.

Conclusion

In this third chapter we have explored the problems of collective action from the perspective of Olson's theory of groups and organizations. Because of the similarity between the special interest groups and international organizations, this theory of collective action has been applied to international relations.

The main focus of Olson's model is on the calculus of the individual decision-maker to determine his contribution to the provision of the public good, i.e., there is an independent provision of the public good in a framework of no coercion. It is this basic model of Olson that is assumed in our own analysis.

In a discussion of some of the critiques and elaborations of Olson's model, it became clear that the basics of his theory were not damaged by the criticisms. They all assumed in one way or another coercion, a taxing scheme, or an overarching capacity. In other words they used different theoretical frameworks.

In the next chapter we will assess some elements of Olson's public goods approach to international relations.

CHAPTER IV AN ASSESSMENT OF SOME ELEMENTS OF OLSON'S PUBLIC GOODS APPROACH TO INTERNATIONAL RELATIONS

Introduction

The modern theory of public goods (1), associated with Professors Samuelson and Musgrave, has not yet attained the status of rigid orthodoxy. Therefore, it is not surprising that important issues remain unresolved. Still, a substantial body of principles has been developed in recent years that has proven to be of interest to economists and others concerned with the analysis of public policy.

In the previous chapter we presented the content, developments and applications of Mancur Olson's collective goods theory. In this chapter we intend to explain, assess and elaborate some elements of this collective goods approach. First, an attempt is made to clarify the public good concept and its relation with similar concepts. Second, we assess the model of independent adjustment group behaviour on which our own analysis of public good in international relations is based. Finally, we discuss the usefulness of the public good concept for international relations and, in particular, the relationship between international organization and the provision of public goods.

(1) A good presentation of public goods theory can be found in Buchanan, J., The Demand and Supply of Public Goods, Chicago: Rand McNally, 1968 ; Burkhead, J. and Miner, J., Public Expenditure, New York: Aldine, 1971, Chapter 1 and 3 ; Hanson, R., Toward an Understanding of Politics through Public Goods Theory : A Review Essay, in Loehr, W. and Sandler, T., Public Goods and Public Policy, Beverly Hills, Ca.: Sage Publications, 1978, p. 67-95 ; Musgrave, R., The Theory of Public Finance, New York: McGraw-Hill, 1959.

A. An Assessment of the Public Good Concept

1. The Concept of Public Good

a. Samuelson's Original Definition

In his now classic series of articles, Samuelson made an admittedly polar distinction between public and private goods. In his original mathematical exposition Samuelson provides a definition of the public good concept :

"I explicitly assume two categories of goods : ordinary private consumption goods ($X_1, \dots X_n$) which can be parcelled out among different individuals (1, 2, ... i, ... s) according to the relations $X_j = \sum_i X_j^i$; and collective consumption goods (X_{n+1}, \dots, X_{n+m}) which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good, so that $X_{n+j} = X_{n+j}^i$ simultaneously for each and every i^{th} individual and each collective consumption good" (1).

From this difference it follows that the conditions for optimal supply of the two types of goods must also differ. In the case of private goods, a given quantity is optimally allocated among individuals when the marginal rates of substitution of one good for another are equal to each other ; and the total quantity is optimal when these marginal rates of substitution are equal to marginal cost ($MRS^1 = MRS^2 = \dots = MRT$). In the case of collective goods, however, the quantity supplied, is optimal only when the sum of the individuals' marginal rates of substitution equals marginal cost. The Pareto optimal condition does no longer hold for a public good ($\sum_{j=1}^n MRS^i = MRT$).

(1) Samuelson, P.A., The Pure Theory of Public Expenditure, Review of Economics and Statistics, Vol. 36, November 1954, p. 387.

Turning now to a detailed consideration of the public good concept, on which Samuelson has based his theory of public expenditure and on which further developments have been made, two main characteristics of the public good stand out, i.e., jointness of supply or indivisibility or non-rivalness of consumption on the one hand, and non-appropriability or non-exclusion on the other hand (1). Because this chapter deals partly with the exposition of the concept of the public good, I shall first examine a little further the exact meaning and implications of the concept.

b. The Characteristics of a Public Good

b.1. Non-Rivalness

We define non-rivalness as the condition where, given a level of physical production, consumption by one person does not thereby diminish the supply of the good potential available for consumption by others. In other words, where X_i units of the good are made available to one actor, these X_i units can simultaneously be consumed by others. This implies that one can differentiate among non-rival goods according to whether or not an actor is able to choose the amount he consumes. It says that there is a difference between the availability of a good and the consumption of it (2).

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- (1) A paper which explores the characteristics of a public good on an extended theoretical level is Snidal, D., Public Goods, Property Rights and Political Organizations, unpublished paper, presented at the meetings of the International Studies Association held in Washington D.C., February 1978.
 - (2) This difference is related to the discussion of the formal and verbal definition of Samuelson's public good. After the publication of his first article on this subject, he was criticized by scholars such as Enke, S., More on the Misuse of Mathematics in Economics : A Rejoinder, Review of Economics and Statistics, Vol. 37-2, May 1955, p. 131-133 ; and Margolis, J., A Comment on the Pure Theory of Public Expenditures, Review of Economics and Statistics, Vol. 37-4, November 1955, p. 347-349.

There are other scholars who have pointed out this difference between the availability of a good and the consumption such as, for instance, Riker, W.H., and Ordeshook, P.C., An Introduction to Positive Political Theory, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1973, p. 259-261 ; and Goldin, K.D., Equal Access : A Critique of Public Goods Theory, Public Choice, Vol. 29, Spring 1977, p. 53-71.

Consider, for example, a free public road. It exhibits non-rivalness in the sense that, once facilities are made available to the community, a person can consume the amount of road facility that is being consumed simultaneously by others. However, people are able to choose alternative routes or modes of transportation. Briefly, people are not required to consume the same amount of road facilities, recreation or public education. Consumption of these non-rival goods do not conform to Samuelson's formal expression. We have then at least two types of jointly supplied goods : those for which an actor can choose the amount he consumes and those for which he cannot. A typology of jointly supplied goods, inspired by Riker and Ordeshook, is shown in Table IV-1.

Table IV-1 Typology of Public Goods (non-rivalness)

actor is able to choose the amount of consumption	actor is unable to choose the amount of consumption
recreation area, roads, ports, lighthouses, socialized medicine, knowledge, polluted beaches, scientific research and develop- ment, public education, etc. ...	fire departments, civil liberties, public order, national defence, pollution control, corporate income tax, inflationary fiscal policies, military deterrence, fisheries conservation, enforcement of laws, embargoes, clean air, etc. ...

Apart from this difference between the availability of a good and the actual consumption of it, very few examples seem to satisfy the equal consumption requirement and many goods seem to lie along the indivisibility spectrum instead of fitting the polar cases. Public goods may be less than perfectly indivisible because of two influences, i.e., accessibility and/or crowding.

Partial indivisibility may result from limited accessibility, owing to the location of the public good with regard to the individuals. If accessibility is unequal between participants, then many individuals will consume less than the total public good supplied. Even the traditional example of defence is an approximation of a public good. Although U.S. defence policy seeks to protect every city in the U.S. equally from attack, there is a radar warning network across Canada but not across Mexico. Consequently, the southern half of the U.S. is probably less well protected from an air attack than the northern half. Other examples, such as public recreation areas or road facilities, are certainly not purely jointly supplied, because not everyone may be able to consume them freely once they are supplied to one person, i.e., not everyone has equal access to a recreation area or to a road. If a recreation park is situated in the countryside, those families who do not have a car, are not in the same consumption position as people having a car. If a factory dirties a nearby stream and pours smoke from its chimneys, those who live along the stream and near the factory, suffer more from the pollution than families who live farther away. Thus, the factory's externality has only a localized effect. The same can be said for aircraft noise. In all these cases, the amount of the good or bad consumed is a function of the geographical location of the production source. One may call it a local public good.

Even if the ability to consume were uniformly distributed, public goods are often subject to capacity constraints. Although true public goods do not have capacity constraints, i.e., once produced, there are no costs in extending consumption to others; even common examples of public goods only approximate this ideal condition (1).

(1) Oakland, W., Congestion, Public Goods, and Welfare, Journal of Public Economics, Vol. 1, November 1972, p. 446-450.

In the case of crowding, increased utilization of a public good creates congestion costs which detract from the satisfaction derived from the good. A public swimming pool and a public park are subject to a saturation of facilities so that, as additional people are admitted to the pool or the park, the enjoyment of those already admitted diminishes. Similarly, the traffic jam minimizes the usefulness of a road. Thus, recreation areas and roads are examples of jointly supplied goods which nonetheless exhibit some of the properties of private goods. These instances of imperfect jointly supplied goods suggest that the amount a person consumes, can be some function of the number of people who also consume the good. Congestion costs have been dealt with extensively in what has come to be known as the 'Theory of Clubs' (1). Clubs are said to be organized so that only members enjoy public goods provided by the membership.

b.2. Non-exclusion

The second standard property of public goods is that of non-exclusion : if the good is available to one person, then it is automatically available to all others. This second dimension of the public good allows to distinguish goods according to whether it is possible or not to exclude others from consuming the good. The use of schools or roads, for instance, is not always free. People can be excluded from consuming these goods by a price mechanism and by the legal system that legitimizes this price (e.g., tuition, tolls, etc. ...). It implies that for a certain category of goods it is possible to exclude others from sharing the good or to charge them the full costs of sharing the benefits of the goods. In other words, if the benefits of a good are appropriable, then the provider can fully control whoever receives the benefit associated with the good. In contrast, when a good is nonappropriable, then the provider is unable to influence whoever receives the benefits. In the examples of national defence and lighthouses, for instance, no one

(1) Buchanan, J., An Economic Theory of Clubs, Economica, Vol. 32, February 1965, p. 14 ; and Ng, Y., The Economic Theory of Clubs : Pareto Optimality Conditions, Economica, Vol. 40, August 1974, p. 308-321.

can be excluded from consuming these goods, although individual shares in financing and maintaining them, might differ.

Appropriability is one of the essential factors determining the feasibility of a market allocation (1). Gains from trade can be realized when appropriability is possible insofar a demander, whether an individual or a nation, reveals a preference in the form of a payment ; otherwise the good can be withheld by the supplier.

In contrast, non-appropriability renders an economic rationale on behalf of the demander to hide true preferences in order to pay a reduced price. At the limit, a demander may reveal no preference for a non-appropriable good in the hope of receiving a free ride once the good is produced. This problem is especially acute for pure public goods, since the indivisible nature of the good can give rise to significant ranges of spillover. A differentiation among goods according to whether or not an actor can easily be excluded from consuming the good, is shown in Table IV-2.

Table IV-2 Typology of Public Goods (non-exclusion)

an actor can easily be excluded from consumption	an actor cannot easily be excluded from consumption
recreation area, roads, bridges, joint production projects, cinema, game reserves, zoos, musea, etc. ...	lighthouses, socialized medicine, knowledge, public order, national defence, exploitation of the seabed, problems of international commons, global environmental protection, enforcement of laws, maintenance of a system, etc. ...

(1) The importance of appropriability is analyzed by Head, J., Public Goods and Public Policy, Public Finance, Vol. 17, 1962, p. 197-219.

If a good is appropriable at no costs, then the provision conditions are unaffected. However, the expenditure of exclusion costs, which transforms a non-appropriable good into an appropriable good, will affect provision requirements. The extent of exclusion costs can be related to the non-appropriability spectrum. The larger the degree of non-appropriability, then the greater will be the necessary exclusion costs. The relationship between non-appropriability and exclusion costs is crucial in resolving whether markets or nonmarket structures should provide the good (1).

The discussion of the characteristics of the public good indicated that after a point one person's consumption of such a good may decrease the amount available for other people (i.e., there will be congestion costs) and that people can be excluded from the benefits of the good through some exclusion devices. Apart from these major conclusions, we also referred to a minor point, i.e., the localization of a public good and its effect on the consumption of it. Eventually, the concept of the pure public good has come under increasing scrutiny.

2. Impure Public Goods

The practicality of the theory of public goods seems severely reduced by the elusiveness of the public good. Examples of pure public goods are difficult to discover. Even many standard examples of public goods appear to have a mixture of public and private good characteristics. The awareness of local effects, special group effects, or clear possibilities of exclusion led to

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- (1) See, for instance, Arrow, K., The organization of economic activity : issues pertinent to the choice of market versus nonmarket allocations, in Haveman, R. and Margolis, J. (eds.), Public Expenditures and Policy Analysis, Chicago: Markham Publishing Company, 1970, p. 59-73 ; Auster, R. and Silver, M., Collective Decision Mechanisms, Public Choice, Vol. 14, Spring 1973, p. 1-17 ; Ruggie, J., Collective Goods and Future International Collaboration, American Political Science Review, Vol. 66, September 1972, p. 874-893 ; Russett, B. and Sullivan, S., Collective Goods and International Organization, International Organization, Vol. 25, Autumn 1971, p. 845-865 ; Sandler, T. and Cauley, J., The Design of Supranational Structures, International Studies Quarterly, Vol. 21, June 1977, p. 251-76.

the introduction of the concept of an impure public good (1).

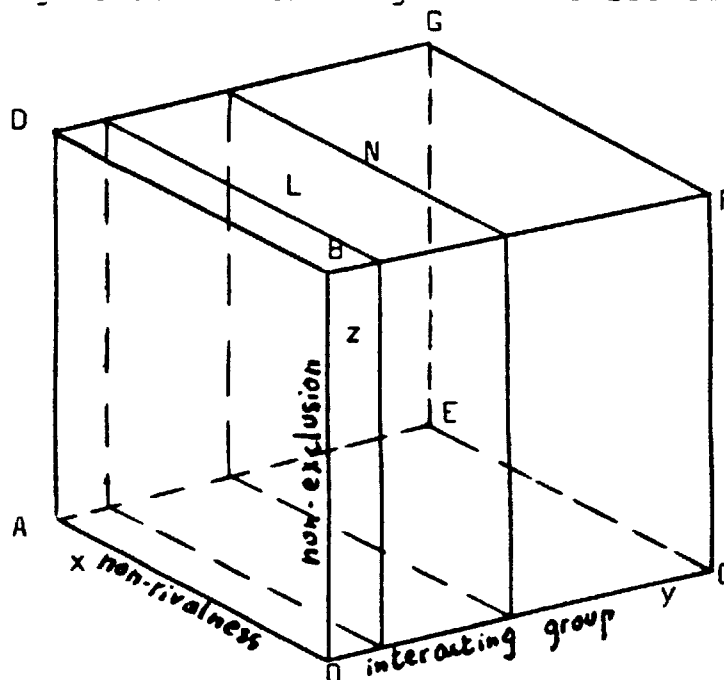
Essentially, a good is impurely public whenever it is partially divisible and/or partially excludable. Earlier in this section we already referred to the two influences of partial divisibility, i.e., limited accessibility and crowding effects. We further mentioned the varying degree of exclusion possibility. Housing, for example, may fall into this category of mixed goods if consumers in general are morally or esthetically disturbed by the existence of substandard housing. Also education can be considered a mixed good by treating the existence of universal literacy as a public characteristic, while the education of a specific person has a high private content, so that the individual gains both from his own education and from the general education level. A similar kind of argument can be made with respect to public transport, communication or health services. Thus, the mixed good can be considered to cover a wide range of goods, from those generally considered to be public goods to others not generally included, and covering goods generally supplied through the market as well as goods generally supplied directly by the government.

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- (1) The literature of impure public goods is quite extensive. Some representative pieces include Buchanan, J., An Economic Theory of Clubs, Economica, Vol. 32, February 1965, p. 1-14 ; Buchanan, J., The Demand and Supply of Public Goods, Chicago: Rand McNally, 1968 ; DeSerpa, A., Multi-dimensional Public Goods, Working Paper, Arizona: State University, 1976 ; Evans, A., Private Good, Externality, Public Good, Scottish Journal of Political Economy, Vol. 13, February 1970, p. 79-89 ; Lancaster, K., The Pure Theory of Impure Public Goods, in Grieson, R., Public and Urban Economics, Lexington: Lexington Books, Chapter 8 ; Litvack, J. and Oates, W., Group Size and the Output of Public Goods, Public Finance, Vol. 25, Nr. 1, 1970, p. 42-58 ; McGuire, M., Private Good Clubs and Public Good Clubs : Economic Model of Group Formation, Swedish Journal of Economics, Vol. 72, February 1972, p. 84-99 ; Ng, Y., The Economic Theory of Clubs : Pareto Optimality Conditions, Economica, Vol. 40, August 1973, p. 291-298 ; Pauly, M., Optimality Public Goods and Local Governments : A General Theoretical Analysis, Journal of Political Economy, Vol. 78, May-June, 1970, p. 572-585 ; Sandler, T., Pareto Optimality Pure Public Goods, Impure Public Goods, and Multiregional Spillovers, Scottish Journal of Political Economy, Vol. 22, February 1975, p. 25-38 ; Winch, O., The Pure Theory of Non-pure Goods, Canadian Journal of Economics, Vol. 6, May 1973, p. 149-163.

The variety of impure public goods suggests that a one dimensional impurity spectrum is a rough oversimplification. Buchanan introduced the size of the interacting group as an important consideration for public good classification (1). Sandler and Cauley have expanded the Buchanan two-dimensional diagram to a three-dimensional box (2). Essentially, the public good character of goods is related to three spectrums, i.e., the degree of non-rivalness, the extent of non-exclusion of the goods's benefits, and the size of the interacting group that consumes the benefits of the good.

In Figure IV-1 we have drawn a boxdiagram which is much inspired by Sandler and Cauley. The degree of non-rivalness of consumption is measured along the x-axis. At point O, there is complete rivalness of consumption (e.g., goods such as bread, shoes, ...). A good located at point A, however, is perfectly non-rival (e.g., goods such as clean air, the sun, ...). The degree of non-exclusion is measured along the z-axis. At point O the good is completely appropriable so that the provider (or owner) can fully control who receives

Figure IV-1 Box-diagram of Public Goods



(1) Buchanan, J., op.cit., 1968, p. 171-177.

(2) Sandler, T. and Cauley, J., the Design of Supranational Structure International Studies Quarterly, Vol. 21, Nr. 2, June 1977, p. 257-258.

the benefits associated with the good, i.e., exclusion is possible. A good located at point B, however, is perfectly nonappropriable so that the provider is unable to influence whoever receives the benefits, i.e., exclusion is not possible. The degree of nonappropriability is determined by the level of the costs of the exclusion.

Finally, the size of the group that is influenced by the good is deputed on the y-axis. The size of the interacting group can vary between 0 and C, where 0 designates an individual and C the entire world community. In the polar case, where the size of the interacting group is one individual, no interdependencies are created. As soon as more than one community member is affected, a potential public good problem arises. Most public goods affect more than two individuals and differ with respect to the size of the interacting group they affect. The size of the interacting group is measured along the spectrum OC.

Any good can now be located somewhere within the box. In the box full exclusion exists anywhere on the OCEA plane and non-exclusion is shown anywhere on the BFGD plane. We can reason in a similar fashion for the two other dimensions of the goods. Private goods are located along the OC line, depending upon the size of the interacting group, because these goods are completely divisible and fully appropriable. On the contrary, world pure public goods such as the sun, the monitoring of the ozone layer, the removal of plutonium waste etc. ... are located at point G.

One may now envisage the partition of the box into areas corresponding to goods depending upon the size of the interacting group (e.g., neighbourhoods, local, regional, state, national, international, worldwide, etc. ...). For instance, private, public, and impure public goods of local nature may be located between and on plane OBDA and plane (OBDA)^L. The area between (OBDA)^N and plane CFGE represents the area of international political concern. Here, the size of the interacting group can vary between 0^N and C, where 0^N designates a national state and C the whole international community. This is the area which is the focus of our own research.

3. The Relationship with Other Concepts

We end this discussion on the concept of public good with some remarks on the relation with similar concepts. The apparent similarities between the concepts of joint production, externality and public goods have long been alluded to by many economists. But a systemic analysis of their interrelations was only started with professor Head's article in 1962 and professor Shoup's contribution in 1965 (1). These contributions were then quickly followed by the succession of papers contributed by other leading figures in the field. The discussion generally revolved around the similarities and differences between joint production, externality and public goods (2).

Most of the orthodox micro-economic theory has been developed in application to exchanges of goods and services that were purely private in consumption and that were produced separately, not jointly. Therefore, it was not necessary to distinguish between a unit of good in production and a unit of good in consumption. However, if

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- (1) Head, J.G., Public Goods and Public Policy, Public Finance, Vol. 17-3, 1962, p. 197-221 ; and Shoup, C.S., Public Goods and Joint Production, Rivista internazionale di scienze economiche e commerciali, Vol. 7, 1965, p. 254-264.

See also Head, J.G. and Shoup, C.S., Public Goods, Private Goods and Ambiguous Goods, Economic Journal, Vol. 79, September 1969, p. 567-572.

- (2) In this context we only refer to some interesting works within this growing literature : Buchanan, J., Joint Supply, Externality and Optimality, Economica, Vol. 33, 1966, p. 404-415 ; Buchanan, J. and Stubblebine, W., Externality, Economica, Vol. 2 p. 371-384 ; Evans, A., Private Good, Externality, Public Goods, Scottish Journal of Political Economy, Vol. 17, February 1970, p. 79-89 ; Holtermann, S.E., Externalities and Public Goods, Economica, Vol. 39, February 1972, p. 78-87 ; Kamien, M., Schwartz N. and Roberts, D., Exclusion, Externalities and Public Goods, Journal of Public Economics, July 1973, p. 217-230 ; Meade, J.E., The Theory of Economic Externalities, Leiden : Sijthoff, 1973 ; Mishan, E.J., The Relationship between Joint Products, Collective Goods and External Effects, Journal of Political Economy, Vol. 77-1, 1969, p. 329-348 ; Mishan, E.J., The Postwar Literature on Externalities : An Interpretative Essay, Journal of Economic Literature, Vol. 9, March 1971, p. 1-28 ; Shibata, H., Joint Production, Externality and Public Goods, in Bird, R.M. and Head, J.G. (eds.), Modern Fiscal Issues, Toronto: University Press, 1972, Chapter 2.

the relations between joint production, externalities and public goods are to be dealt with, discussion can be clarified if a distinction between production units and consumption units is made explicit. Henceforth, we frame our discussion of these concepts within the analysis of the phenomena of interdependence in production and consumption : joint production being treated as a special case of production externality, and a public good as a special case of consumption externality.

a. Public Goods and Externalities

We first focus our attention on the relationship between externalities and public goods. The difficulties of making a clear distinction between public goods and private goods, and of linking the former to external effects appear to be attributable to a number of factors : 1) The use of such term as public goods on the one hand, and private goods on the other, terms which have conventional associations, as a means of making a conceptual and functional distinction, has led to some confusion ; 2) because of the conventional association of such terms, the definition led to some rigidity and consequently, decreased the usefulness of these concepts ; 3) there was a failure to abstract initially from congestion costs or, more generally, from external effects in determining which category a specific good falls into ; and 4) there was also a failure to make a distinction between - which we have already mentioned - two types of collective goods, optional and nonoptional.

There has even been a tendency in the literature on external economies to ignore the public good aspect of externalities and a tendency in the literature on public goods to identify the two concepts with each other. However, many externally produced commodities do have the character of public goods. In short, despite some elaborations and notational distinctions, the nature of the relationship between public goods and external effects has remained elusive.

An externality exists whenever the consumption or production activities of one individual affects, either positively or negatively, the activities of several other individuals, and where no mechanism exists to compensate those bearing external costs. Externalities may exist between two or more producers ; between two or more consumers ; or between producers and consumers. Moreover, producers may correspond to individuals, firms or nations.

For instance, a firm may produce smoke from its chimney and noise from its machinery. The smoke and the noise are inputs in the production and consumption activities of other economic agents, but the firm does not pay anyone any compensation for consuming its byproduct. The commodities which exert external effects on other economic agents can be called external outputs. They are produced jointly, in fixed or variable proportions, with the commercial output of the firm.

If costs and benefits of externalities are unrecognized when allocative decisions are reached, inefficiency results in the form of suboptimal provision of some desirable activities and superoptimal provision of some undesirable activities. Pareto optimality will not result from a voluntary exchange in the market. However, not all interdependencies are matters of concern, only those which prevent optimum-solutions.

When costs are recomputed to include all relevant social costs, the externality is said to be internalized in efficient allocations. Four fundamental methods permit internalization : 1) A tax subsidy scheme can be implemented in order to equate social and private costs or benefits ; 2) The parties can bargain ; 3) A court can impose a liability assignment that internalizes the externality, or 4) A nonmarket structure can regulate the level of externality. The second solution is most relevant to situations involving only a small number of participants so that benefits from cooperation are easy to recognize and inexpensive to achieve. The other three solutions necessitate the existence of a specialized institution, i.e., a fiscal mechanism, a court or a nonmarket structure. In the last section of this chapter, we return to this discussion of internalization of an externality, particularly in the field of international relations.

What now about the exact relationship between externalities and public goods? Whether or not a good is a public good, depends on the characteristics of the good. And because of the nature of a pure public good, it is its total supply which enters the consumption or production vector of each economic agent affected by it. Public goods are then closely related to externalities since a special class of consumption externalities can be analyzed as public goods. If x^{ij} represents the i^{th} individual's consumption of the j^{th} good and x^{ij} is a public good to the interacting group, then the welfare conditions for this consumption externality are equivalent to that of a public good, i.e., $\sum_{i=1}^n \text{MRS}^i = \text{MRT}$, where MRS^i refers to the marginal benefits derived from x^{ij} by each individual. Thus, a consumption externality that all individuals experience is equivalent to a public good.

For instance, it is the total quantity of flowers in A's garden visible to passers-by that B and C enjoy, and B's enjoyment of the view of A's flowers does not diminish the quantity of A's flowers available for C to enjoy. The external output, flowers visible to passers-by, is a public good. Pollination services of bees, nectar from apples, exhaust fumes from cars, smoke from factory chimneys, noise from aircrafts, waterpollution from chemicals - all these standard examples of external outputs may be treated appropriately as public goods. An example of a negative consumption externality in the international sphere concerns the explosion of a nuclear device. As the cloud of nuclear fallout moves, other nations receive harmful fallout from a consumption activity that they had no part in.

We have already said that, when production or consumption externalities are unresolved, Pareto optimality will not result from a free operation of the market mechanism. In the case where market failure is created by the presence of a public good, the externality is noncompensated for, due to one of the following reasons. First, given existing technology, exclusion may be impossible as in the case of nuclear waste. If exclusion is impossible, then full preference revelation is problematic, and the set of Pareto efficient prices cannot be ascertained. Second, it may be possible to ascertain the set of Pareto efficient prices by forcing preference revelation but prohibitively costly to do so.

However, in some instances, this type of externality can be compensated for or internalized through the market system. Thus, within the framework of decentralized markets, if procedures exist that provide for internalization where all costs and benefits are included, interdependencies do not inhibit the attainment of the Pareto efficient conditions (i.e., a public good does not always create a market failure). The problem, of course, is that in many instances institutionalized procedures do not exist to internalize interdependencies.

b. Public Goods and Joint Products

Let us now say a few words about the relationship between joint production and public goods (1). Joint production requires that the same intermediate inputs produce two or more outputs, i.e., the unit of production embodies two or more final product components. In the classic Marshallian example, the cattle breeder produces steers, each unit of which embodies both meat and hide ; or oil produces gasoline, kerosine and synthetic fibre.

For public goods, an intermediate input may produce one or more pure public goods as well as private or impure public goods. For example, defence expenditures by an alliance produces deterrence (pure public good), earned foreign exchange for nations that host military bases (private good) and protection against attack (impure public good) (2).

(1) On public goods and joint products, see especially : Mishan, J.E., The Relationship between Joint Products, Collective Goods and External Effects, Journal of Political Economy, Vol. 77-1, 1969, p. 329-348 ; Oakland, W., Joint Goods, Economica, Vol. 36 1969, p. 253-268 ; Samuelson, P., Contrast between Welfare Conditions for Joint Supply and for Public Goods, Review of Economics and Statistics, Vol. 51, February 1969, p. 26-30 ; Shibata H., Joint Production, Externality and Public Goods, in Bird, R.M. and Head, J.G. (eds.), Modern Fiscal Issues, Toronto: University Press, 1972, Chapter 2 ; Shoup, C.S., Public Goods and Joint Production, Rivista internazionale di scienze economiche e commerciale, Vol. 7, 1965, p. 254-264.

(2) See, for instance, Shaffer, S., Alliance Politics : A Model on Divisibility of Pay-offs, in Loehr, W. and Sandler, T., Public Goods and Public Policy, Beverly Hills, Ca.: Sage Publications, 1978, Chapter 8.

Joint products complicate the form of provision conditions in the sense that these conditions will be essentially a conglomerate of the provision conditions of the various goods produced. In short, joint products tell us something about the way the goods are produced, whereas public goods tell us something about the way the goods are consumed.

Olson's by-product theory may best be understood from this perspective (1). Many types of organizations obtain their support mainly because they provide some private goods besides their main performance (e.g., labour unions, family organizations, professional organizations, cultural associations, etc. ...). In other words, they provide selective incentives to induce people to join and to bear their share of the burdens in achieving public goods. Those incentives may be considered joint products.

c. Public Goods and Economics of Scale

A final word is said about the relationship between public goods and economics of scale. While the concept of public good refers to the characteristics of the good (i.e., non-rivalness in consumption and non-exclusion), economics of scale refer to the production function of a good and consequently, determines the contour of the production possibility curve. In other words, any good, be it public or private, can be produced jointly to take benefit of the economics of scale in production. We will return to this idea of economics of scale in the production of goods in Chapter V.

(1) Olson, M., The Logic of Collective Action : Public Goods and the Theory of Groups, Cambridge: Harvard University Press, 1965, Chapter 6.

B. An Assessment of the Cournot Model of Group Behaviour for Public Good Allocation

1. Introduction

In a second section we try to analyze the model of group behaviour on which most of our theoretical thinking for this research has been based. In 'The Logic of Collective Action', Olson strongly criticized the work of the analytical pluralists, particularly with regard to the fairness of the outcomes in a pluralist system (1). The foundation of his criticism and consequently, the elaboration of his theory of collective action in international relations, is based on the Cournot model of group behaviour in the presence of a public good.

As we described in Chapter III, Olson concluded that larger groups are less able to provide collective goods through Cournot behaviour than small groups. Our own analysis remains chiefly in the Cournot determined group behaviour (2). In the following theoretical exposition of group behaviour we will analyze the non-cooperative Cournot equilibrium and will compare it with the cooperative Pareto equilibrium.

If countries choose to take into account the positive externalities conferred upon each other, optimal cooperation entails that the countries reach a bargain which satisfies the Pareto optimality conditions, so that the externality will be internalized. Should

(1) Olson, M., op.cit., Chapter 5.

(2) Other analyses which have used the same framework are : Salisbury R., An Exchange Theory of Interest Groups, Midwest Journal of Political Science, Vol. 13, February 1969 ; Stigler, G., Free Riders and Collective Action : An Appendix to Theories of Economic Regulation, Bell Journal of Economics and Political Science, Vol. 5, Autumn 1974 , p. 359-365 ; Wagner, R., Pressure Groups and Political Entrepreneurs : A Review Article, Papers on Non-Market Decision-Making, Charlottesville, Virginia: University of Virginia, 1966, p. 161-170.

Another type of model (i.e., game theoretical framework) is given by Guttman, J., Understanding Collective Action : Matching Behaviour, American Economic Review, Vol. 68-1, 1978, p. 251-255

they decide not to cooperate, but rather seek to maximize their welfare independently of one another, the resulting equilibrium will be suboptimal under fairly broad assumptions. One important scheme of non-cooperation is the Cournot behavioural assumption (1).

In the Cournot model of independent maximization behaviour each consumer acts independently in deciding how much public good he wants to purchase. He takes the purchases of the other consumers as given and adjusts his own purchase so as to obtain his highest possible indifference level. When each consumer is in a position where he has no incentive to change his purchase, the economy is in equilibrium.

The Cournot equilibrium is characterized by a set of actions, based on a number of expectations, determining others' actions that result in everyone's expectations being met. It supposes that no payments are made for spillovers and that each person attempts to maximize his welfare under the assumptions that the production of the good by the others remains constant. The Cournot independent welfare maximization results in underproduction of the good.

It should be noted that this conclusion does not hinge upon the assumption that spillovers imply no repercussions on domestic production and consumption patterns. On the contrary, changes in the production of the good by individual B induce changes in the equilibrium production and consumption patterns of individual A. This reasoning implies a reaction curve process similar to the well-known one first derived by Cournot. An equilibrium position, which takes into account changes in behaviour caused by externalities and also satisfies the independent welfare maximization conditions, will be reached. Once again, the resulting equilibrium is suboptimal. Of course, the analysis assumes that the parties fail to take

(1) The independent adjustment equilibrium has been discussed by many authors including Buchanan, J., Cooperation and Conflict in Public Goods Interaction, Western Economic Journal, Vol. 5, March 1966, p. 109-121 ; Chamberlin, J., A Diagrammatic Exposition of the Logic of Collective Action, Public Choice, Vol. 36, Summer 1976, p. 59-74 ; Chamberlin, J., A Collective Goods Model of Pluralist Political Systems, Public Choice, Vol. 33, 1978-1, p. 97-113 ; Jerimias, R. and Zardkoohi, A., Distributional Implications of Independent Adjustments in an Economy with Public Goods, Economic Inquiry, June 1976, p. 305-308.

advantage of the opportunity to gain through efficient cooperation.

If the problem is viewed as a non-cooperative game, we define the equilibrium position as a Cournot equilibrium. And, as we said, the connection between equilibria and optimality is broken. Therefore, two properties of Cournot behaviour are of particular interest, i.e., the amount of the public good provided through Cournot behaviour and the amount which would be provided if the optimality conditions of the economy theory were to be met.

The optimality conditions require that the marginal costs of producing the public good should be shared among its consumers in proportion to the marginal benefits received. From the infinite set of cost-sharing plans which result in a Pareto optimal allocation a particular one will be used in the analysis below, i.e., the one suggested by Lindahl.

In the Lindahl model (1), a kind of cooperation is evoked : each consumer contributes the value that the public good has for him. This is done by assigning to each consumer a personalized price for the public good. The price for the private good remains the same for everyone. When the system of personalized prices is such that everyone prefers the same quantity of the public good, then the economy is in a Lindahl equilibrium. In the Lindahl equilibrium the close connection between equilibria and optimality of the competitive model is preserved. At the same time, however, these personalized prices prevent the Lindahl model from serving real world allocation purposes.

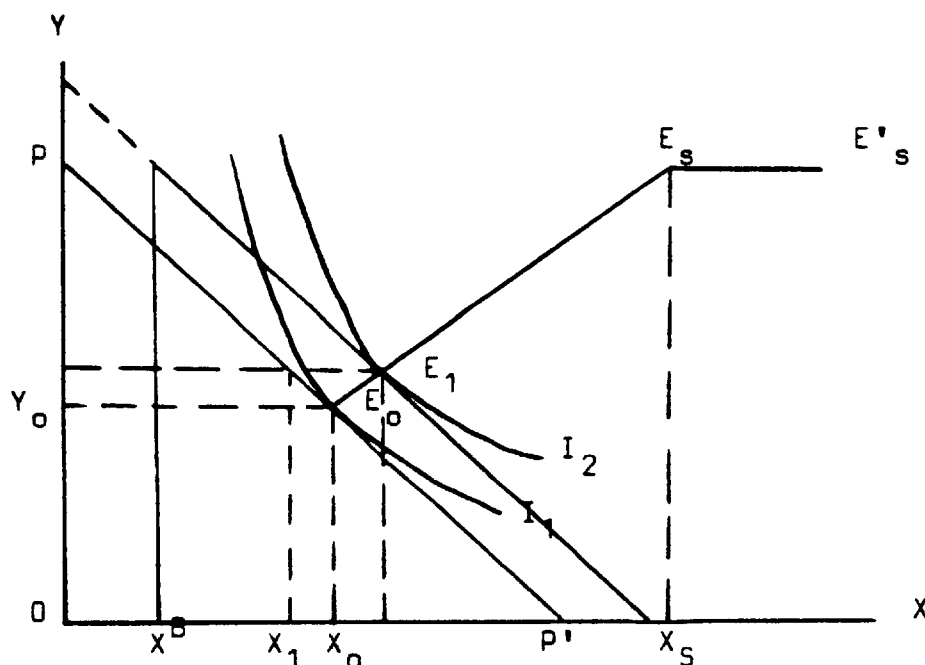
(1) For a discussion of the properties of the Lindahl equilibrium see Musgrave, R., The Theory of Public Finance, New York: McGraw-Hill, 1959 ; and Head, J., Public Goods and Public Welfare, Durham, North Carolina: Duke University Press, 1974.

2. Graphic Representation of a Non-Cooperative Cournot Equilibrium and a Cooperative Pareto Equilibrium

a. The Cournot Equilibrium

We can construct the following graphic representation of the Cournot equilibrium (Figure IV-2) (1). Consider an individual A faced with a choice allocating his income to purchases of two goods, a private good (Y) and a public good (X). The preferences of the consumer are represented by a set of indifference curves (I_1, I_2, \dots). His production possibility curve is given by the line PP' . He will maximize his satisfaction by purchasing a commodity bundle on the highest indifference curve consistent with the production possibility constraint. In Figure IV-2 the individual's optimal consumption is located at point E_0 . At E_0 he will buy OX_0 of X and OY_0 of Y.

Figure IV-2 The Cournot Equilibrium

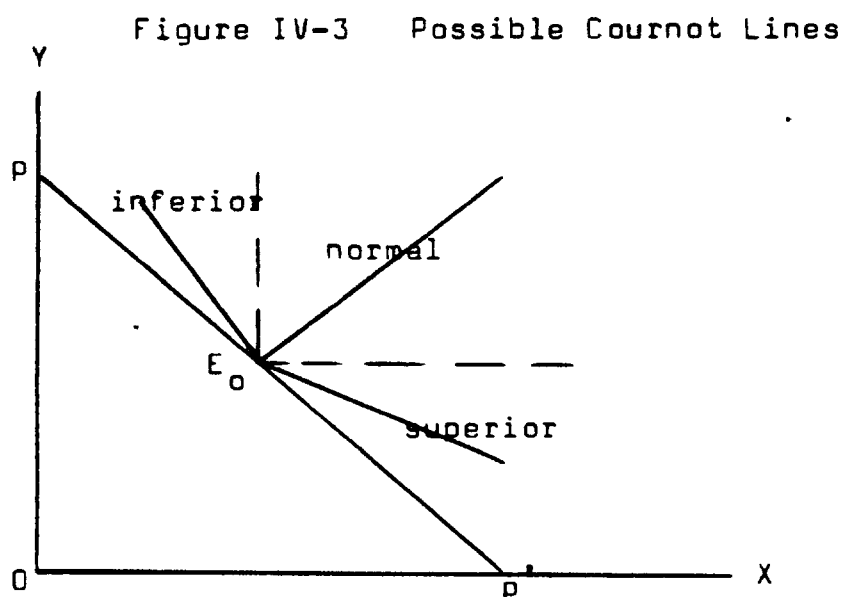


(1) For other graphic representations, see Chamberlin, J., A Diagrammatic Exposition of the Collective Action, Public Choice, Vol. 36, Summer 1976, p. 59-74 ; and Danziger, L., A Graphic Representation of the Nash and Lindahl Equilibria in a Economy with a Public Good, Journal of Public Economics, Vol. 6, 1976, p. 295-307.

In the Cournot model each consumer acts independently. He considers the purchase of the others as given when he decides how much he himself wants to purchase. Now suppose others purchase an amount OX^B of the public good. Because of the non-exclusion property of public goods, this amount OX^B is automatically available to the first individual. This has the effect of shifting the vertical axis to the right by the amount OX^B . Also the production possibility curve PP' is shifted to the right by the amount of OX^B since the individual now consumes this amount of the public good without having to pay for it. This public good spillover effect increases the first individual's income and he is free to allocate his income as he chooses so long as he consumes at least an amount OX^B of the public good. He cannot, however, spend more than the amount OP on the consumption of the private good (Y). The individual's optimal consumption is now located at point E_1 , point of tangency between the highest indifference curve and the shifted production possibility curve. This induced income increase at E_1 results in a higher consumption of both private and public good. At the same time we see that individual A will drop his own public good production from OX_0 to OX_1 .

For alternative quantities bought by others, a consumer's choices of X and Y will lie on a line beginning in E_0 and passing through the points where the different production possibilities curves are tangent to the indifferent curve. In the Cournot equilibrium the individual responds to increases in his income brought about by the provision of the public good by others. The locus of the individual's optimal consumption equilibria ($E_0, E_1, \dots, E_S, E'_S$) is designated as the Cournot line and resembles an income-consumption curve. They are not totally identical for two reasons first the Cournot line originates in E_0 , while the income-consumption line originates in O and second, due to the nonnegativity requirement of (Y), the Cournot line cannot intersect the line parallel to the abscissa. If others were to provide an amount of the public good greater than or equal to OX_S , the individual will devote his entire budget to the purchase of the private good as indicated by the horizontal line $E_S E'_S$.

The slope of the Cournot line depends on the income elasticity of the demand for goods X and Y. In the literature we usually deal with 'normal goods', i.e., goods with a positive upward slope of the Cournot line. On the basis of their income elasticities, goods are distinguished in three broad classes, i.e., normal goods, inferior goods and superior goods. In the case of a normal good, an extra unit of the collective good provided by others induces a reduction in the provision by the individual of less than one unit. For an inferior good, an extra unit provided by others induces the individual to reduce his own provision of the good by at least one unit, and for a superior good, an extra unit provided by others induces an increase in the amount provided by the individual of at least one unit (1). Three representative Cournot lines are shown in Figure IV-3.



(1) These categories of goods have corresponding Cournot lines with the following slopes :

- normal good : $0 < e < \frac{S_0}{I_0}$ So is Consumption of the good
- I₀ is Income
- inelastic good : $0 < e < 1$
- elastic good : $1 \leq e < \frac{S_0}{I_0}$
- inferior good : $e \leq 0$
- superior good : $e \geq \frac{S_0}{I_0}$

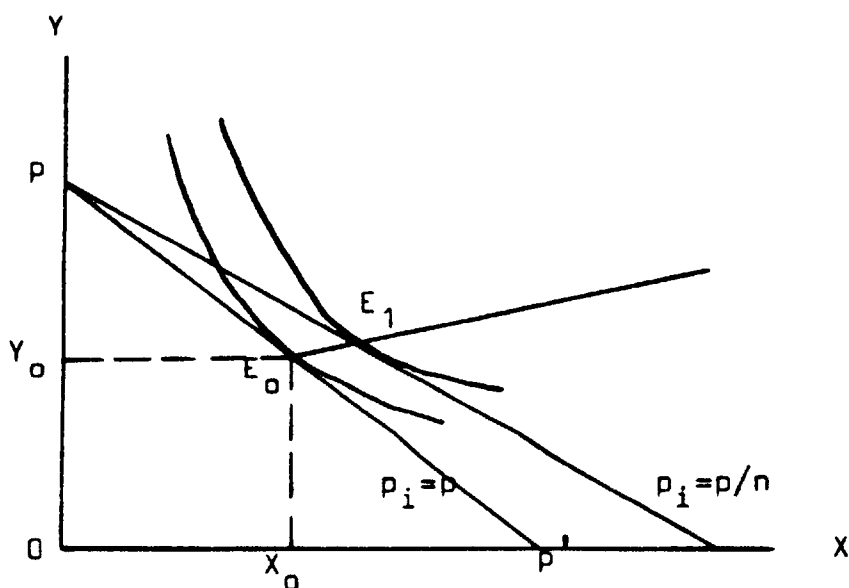
b. The Lindahl Equilibrium

The other model of allocation of a public good is developed by Lindahl. He examines a competitive allocation process similar to that which prevails in the private market, but where a revenue-expenditure process operates to satisfy public goods demands. This is done by introducing a system of personalized prices for the public good. For each consumer the personalized price is equal to his marginal benefit from X ; so a consumer gives a contribution which captures the value X has for him. The resulting allocation corresponds to a pseudo-competitive equilibrium in the public sector.

The Lindahl equilibrium is characterized by each consumer acting according to a personalized price p_i when he decides how much X he wants to be allocated. $\sum_i p_i$ is the production price of the public good, and every individual prefers the same quantity of X .

This Lindahl equilibrium can be found in a way analogous to the Cournot equilibrium. By varying the personalized price p_i , the consumer's choices of X and Y appear in Figure IV-4 as a line beginning in E_0 and passing through the points where the different budget lines are tangent to the indifference curves. This line is designated the Lindahl line. The Lindahl line corresponds to a price-consumption

Figure IV-4 The Lindahl Equilibrium

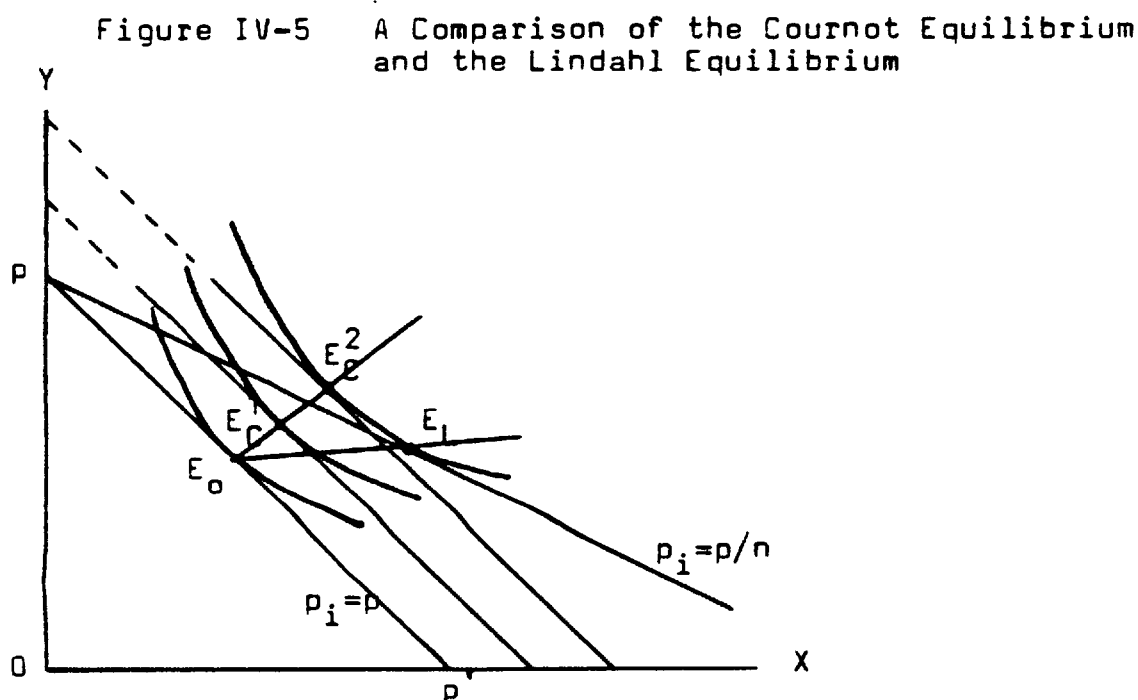


curve except that it originates in E_0 , where the consumer pays all the costs of the public good.

As compared to the Cournot model, the Lindahl model uses the individual's responses to variations in the price of the public good (brought about by an agreement among the individuals involved to share the costs of providing the public good). The E_0E_s shows a portion of the price-consumption curve for the individual, which is the locus of the individual's optimal consumption as the price he is charged for the public good declines. The slope of the Lindahl line depends on the price elasticity of the demand for X respectively Y . The same reasoning can be repeated as we already did for the income elasticity in the Cournot model.

3. A Comparison of the Cournot Equilibrium and the Lindahl Equilibrium

Figure IV-5 shows the relevant positions of the income and price consumption curves and the original budget line. The Cournot and Lindahl lines both originate from the same point, namely point E_0 . Here, the consumer alone pays for the public good. In addition, a new budget line is shown, corresponding to a price of p/n for the



public good. This budget line would result if the individuals were to share the costs of providing the public good. The Cournot equilibrium occurs where the income-consumption curve intersects the budget line (with price p/n for the public good), and the Lindahl equilibrium occurs where the price-consumption curve intersects this same budget line. After point E_0 , it appears that the Cournot line will always lie above the Lindahl line. This follows from the fact that the slope of each indifference curve is decreasing so that a Cournot budget line is tangent to an indifference curve for a smaller amount of X than a Lindahl budget line is tangent to the same indifference curve. Accordingly, X_{EL} will lie below X_{EC} . The well-known proposition follows that more X will be allocated in the Lindahl equilibrium than in the Cournot equilibrium. Because the Lindahl equilibrium is Pareto optimal, the degree of suboptimality associated with Cournot behaviour is measured by $(X_{EL} - X_{EC})$.

As to the Cournot equilibrium, the following conclusions can be derived :

1. X_{EC} increases as group size (n) increases.
2. X_{EC} decreases as the price of the public good (P) increases.

As Olson argued, Cournot behaviour results in a suboptimal provision of the public good. The following conclusions concerning the degree of suboptimality can be drawn :

1. The more price-elastic the demand for the public good, the greater the degree of suboptimality.
2. The more income elastic the demand for the public good, the less the degree of suboptimality.

The argument for collective provision of pure public goods rests on the inability of independent maximization behaviour to guarantee a more efficient allocation of resources to public wants. We showed that the Cournot independent adjustment equilibrium is not Pareto optimal. However, in many instances the inefficiency of independent adjustment may not be a sufficient cause for collective action, so that a rationale of collective action advanced in favour of a Lindahl point is less compelling than usually portrayed. This is certainly

the case when welfare, distributional implications are taken into account (1). In other words, the expanded opportunities for consuming public goods in the Lindahl solution, are not always sufficient to compensate a person for giving up the effective income expansions obtained through independent adjustment. Some scholars have even argued that greater cooperation within groups may result in less efficient political processes, so that it would be difficult to argue that all processes involving increased cooperation would be an improvement over the unorganized processes.

To sum up, in this section we have analyzed the behaviour of two types of groups, i.e., unorganized and organized groups. Although the great majority of public goods in the real world are not allocated according to the conditions of one of the models of group behaviour, there is still reason to believe that the unorganized, non-cooperative model of Cournot group behaviour is a useful tool for analysis. It is this theoretical model of voluntary collective action which is assumed in the present analysis.

(1) See, for instance, Jeremias, R. and Zardkoohi, A., Distributional Implications of Independent Adjustments in an Economy with Public Goods, Economic Inquiry, June 1976, p. 305-308 ; and Mo-Yin, T. and Persky, J., On the Distributional Implications of Collective Provision of Public Goods, Public Choice, Vol. 33, 1978-4, p. 61-69.

C. An Assessment of the Public Good Concept in International Cooperation

The major objective of this section is to illustrate how economics and, in particular, the theory of public goods, can be useful in the study of international cooperation. Our purpose is not so much to talk about specific devices of international cooperation as it is to illustrate how concepts from economics can be useful in analyzing the types of problems that emerge in international cooperation. We address ourselves to some broad questions as to the concept of public good in international relations and the relationship between an international cooperation structure and the provision of a public good.

Introduction

First, an application of public good elements to international relations implies a good command of the concept of public good. And from our discussion in the first section of this chapter, we may recall that the public good concept is more complicated and intricate than most analyses make us believe. The application of the collective goods theory to international relations has been strongly stimulated and influenced by Olson's 'Economic Theory of Alliances' and its elaborations by other scholars. As we have indicated in Chapter III, economists and political scientists have spent considerable theoretical and empirical effort in studying military alliances from a public goods perspective (1).

Olson analyzed defence as a pure public good. Within an alliance a unit of defence production was assumed to render a full unit of defence service to all alliance residents regardless of the location

(1) Economic issues of defence alliances that directly relate to the public goods theory are very well examined in Sandler, T., Loehr, W. and Cauley, J., The Political Economy of Public Goods and International Cooperation, Colorado: University of Denver, Monograph Series in World Affairs, 1978, p. 68-80.

the defence. In chapter III, it was mentioned that Sandler (1) examined the publicness of defence by separating the defence good into its basic service of protection and deterrence. Defence is then considered as an intermediate input providing a number of joint product outputs that are private, pure public, and impure public in nature.

A classification continuum for defence goods was set up from a purely deterrent weapon (i.e., whenever the weapon's sole purpose is to convey a credible threat of retaliation on behalf of an alliance) to a purely protective weapon which can be used exclusively to shelter or forewarn against an attack. Olson and Zeckhauser, Russett and others have focussed on the purely deterrent weapons and have, consequently, treated defence as a pure public good. However, the possibility of exclusion that both private defence benefits and protective defence goods provide gives the alliance members a leverage on free riders who refuse to reveal their preferences.

By not separating defence into its pure and impure public components, previous investigators paid little attention to the effects of differences in the divisibility of payoff on members' actions and, consequently, overstated the relationship between collective goods and the theory of alliances (2). In effect, a more subtle use of the concept of public good has led to a less rigid application of the public goods' theory to alliance politics. This discussion should make us aware of the difficulties one encounters in applying a public goods' approach to international relations.

A second point of discussion refers to the relationship between international organization and public goods provision. Alliances are viewed as almost exclusively cooperative ventures whose purpose is the achievement of some commonly shared objective. Nations enter into alliance to pursue a goal which they cannot achieve in the

(1) Sandler, T., Impurity of Defense : An Application to the Economics of Alliances, Kyklos, Vol. 30, 1977, p. 443-460.

(2) Shaffer, S., Alliance Politics : A Model on Divisibility of Payoffs, in Loehr, W. and Sandler, T., Public Goods and Public Policy, Beverly Hills, Ca.: Sage Publications, 1978, Chapter 8.

absence of cooperative effort to other nations. Olson proposes a straightforward relation between an international organization and its function of a public good's provider : "The achievement of any common goal or the satisfaction of any common interest means that a public or collective good has been provided for that group. The very fact that a goal or purpose is common to a group means that no one in the group is excluded from the benefit or satisfaction brought about by its achievement ... It is of the essence of an organization that it provides an inseparable, generalized benefit. It follows that the provision of public or collective goods is the fundamental function of organizations generally" (1).

The fact that collective goods are inherrent in organizational or group efforts to attain a common objective, has a special importance in the international context. Olson concludes that international organizations, international cooperation, and military alliances (i.e., various forms of international collaboration), whether tacit or formal, produce collective goods and that these goods are provided in suboptimal amounts.

However, it is a somewhat misleading and unshaded reasoning to jump from the assertion that international organizations serve the common interest of member states to the claim that these organizations provide public goods. Gains from a cooperative arrangement do not imply that the goods covered by the arrangement are public. I think it is incorrect to assert that all outputs of governments and organizations are public goods. Therefore, in this section we try to widen the discussion by looking at the international dimension of goods which are provided through international cooperation. We propose a taxonomy of international goods using the properties of the public good in order to assess the various modes of international cooperation.

(1) Olson, M., The Logic of Collective Action : Public Goods and the Theory of Groups, Cambridge, Ma.: Harvard University Press, 1965 p. 15.

1. A Classification of International Goods and the Relationship with International Arrangements

Control of plutonium waste, monitoring of the ozone layer, assignment of space orbits for satellites, regulation of ocean resource exploitation, scientific investigation, environmental conservation, problems of arms control, economic development, etc. are but a few examples of allocative problems that the international community is faced with. Responses to meet these challenges range from national action to international action. Should a particular international structure require exhaustive political and economic integration, or should it merely provide a means for collaboration or coordination ? What are the relevant benefits and costs associated with an international structure? More generally, what criteria should be employed in assessing the different modes of allocation of international goods? Here, we limit ourselves to the analysis of various responses of international cooperation structures among nation states. Focus is, as we have said, on the use of economic theory and, particularly the theory of public goods, to furnish an assessment of the architecture of international structures providing international goods.

Earlier we presented a three-dimensional scheme that accounted for the characteristics of a public good, i.e., non-rivalness, non-exclusion and the size of the group that is influenced by the good. Here, we are only dealing with goods exhibiting an international dimension in their production or consumption activities. Henceforth, in Figure IV-6, the size of the interacting group varies from one nation to the whole international system.

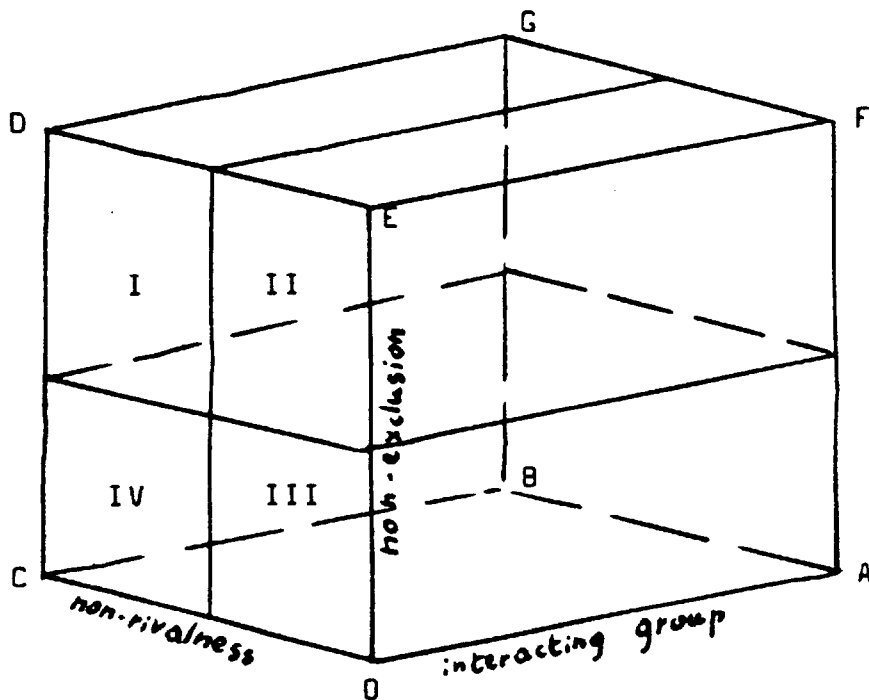
By classifying the international goods according to the approximation to the basic properties of public goods, we arrive at a very simplified but useful four-fold division of international goods (1). The nature of the good will determine the size affected by it. That is, some goods may influence a small community (e.g., a drainage system, removal of pollution from a lake shared by two nations,

(1) The classification is based on Ruggie, J.G., Collective Goods and Future International Collaboration, American Political Science Review, Vol. 66, 1977-2, p. 874-886.

etc.), whereas other goods may affect the entire world (e.g. INTELSAT). Roughly we find four boxes representing four categories of international goods.

This four-fold classification of goods and services in international relations is only meant to be suggestive. Although much more nuance and accuracy should be brought in this discussion, it still may provide us with a helpful tool for answering specific questions as to the level of cooperation, production, resource allocation, cost bearing and forms of concerted collective action in international relations. In other words, this division may shed some light on the purposeful behaviour of a state to international cooperation, i.e., each of the four sets of characteristics implies a different form of internationally collaborative arrangement with differing attitudes of the nations involved.

Figure IV-6 Box-diagram of International Goods



The first set of characteristics approximates a pure collective good (Box I) : equal potential availability to all exists once the good or service is provided for one state, and it is very costly or nearly impossible to exclude others from sharing in the benefits or for other states to protect themselves from the suffering provided by the good or service. In other words, a state may provide a good or service which is extended to all, or it may find that it suffers from another state's good or service in the sense that it cannot protect itself against the bad. In circumstances when such situations become mutual and costly, the international production and/or regulation of the goods become likely. Thus, in order to achieve a better allocation of this category of goods, some nonmarket mode of internalization of externalities is needed.

If such international organizational arrangements should be organized, they would perform a specific task of production or regulation. In so doing, their purpose would be to compensate for both the decentralized nature of the interstate decision-making system and for the definition of political jurisdiction and ownership. Their task, in effect, would include the introduction of elements of collective decision-making and collective ownership to participate in the production and regulation of this particular activity. The nature of this type of international goods justifies that, in some instances, depending on the costs and benefits of the agreements to produce or regulate these goods, supranational structures may be the best mode of allocation.

However, I would like to stress the point that it is not because a good falls in this first broad category or because countries have a common interest in providing the good that collective action according to this specific organizational form will actually take place. This is what Olson tries to prove with his theory. I only want to indicate that, depending on the costs and benefits of the arrangements needed, there might be a relationship between the nature of the international good and the mode of allocation. In the last section I deal in some length with the costs and benefits of some modes of allocation of international goods.

Deterrence, as provided by a nuclear submarine force, serves to illustrate a 'pure' international public good (1). The introduction of an ally to an alliance does not decrease the deterrence consumed by the existing allies. Moreover, if the opposition perceives an alliance as unified, then deterrence cannot be withheld from any alliance member regardless of its contribution to the defence production of the alliance. Output of fundamental science (2 international control of pollution, global environmental protection general devices for a New International Economic Order, technologies for weather control and climate modification, the formal international rules of the game for international commodity agreements, established by the GATT, etc. ...), they all provide examples of this first category of international goods. Also the output of an international cartel may be considered as an international public good. OPEC, for instance, provides the public good of a high negotiated oil price to members as well as to non-members.

The second broad category deals with international goods exhibiting a low indivisibility and a high excludability (Box II) : the goods or services are divisible because of 'imperfections in property titles', others cannot very easily be excluded from benefiting from it or cannot very easily protect themselves from any disservice it might be causing them. If other states are enjoying the benefit of one state's production of a good or service and this state can in no way, or only at high cost, exclude or charge the other states the cost of partaking, it would be unrealistic, given the assumption made, to expect them to contribute voluntarily. Or, if other states are suffering from a state's provision of a good or service and cannot, or only at high costs, exclude themselves from such negative spillovers, it would be unrealistic to expect this state voluntarily to offer compensation. In both theoretical examples a divergence between private and social costs exists as this state would tend to underproduce the first kind of good and overproduce the second. To the extent to which such divergences become costly, the international production of the first type of international good and

(1) Sandler, T., Impurity of Defense : An Application to the Economics of Alliances, Kyklos, Vol. 30, 1977, p. 443-460.

(2) Ruggie, J.G., op.cit., p. 883.

the international regulation of the second kind becomes more likely.

The organizational arrangements would be different from those explained under the first case. In performing a specific task, they would be required to compensate for 'those imperfections in property titles' within the interstate system which generates this divergence between private and collective costs (1). Within a task-specific context, their role would include introducing and representing definitions of collective ownership and jurisdiction.

The exploitation of the seabed beyond the limits of national jurisdiction is an interesting instance of this second type of international good (2). More precisely, a common property resource such as fisheries outside of coastal waters, for example, is divisible since one nation's catch fully detracts from another nation's ability to catch the same fish. However, these fisheries are, at present, only partially appropriable because of 'imperfections in property titles' (3).

Although the oceans have been declared the 'common heritage of mankind', the operationalization of this concept is far from settled and redefinition of property titles is still being discussed. This

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- (1) An interesting article in this perspective is : Conybeare, J.A., International Organization and the Theory of Property Rights, International Organization, Vol. 34, Nr. 3, Summer 1980, p. 307-334.
 - (2) See Amacher, R.C. and Sweeney, R.D., The Law of the Sea : U.S. Interests and Alternatives, Washington D.C., 1976 ; Friedmann, W., The Future of the Oceans, New York: G. Braziller, 1971 ; Tollison, R. and Willett, T., Institutional Mechanisms for Dealing with International Externalities : A Public Choice Perspective, in Amacher, R.C. and Sweeney, R.D., The Law of the Sea : U.S. Interests and Alternatives, Washington D.C., 1976, p. 77-101 ; Sweeney, R.J., Tollison, R.D. and Willett, T.D., Market Failure, the Common-Pool Problem, and Ocean Resource Exploitation, Journal of Law and Economics, Vol. 17, Nr. 1, April 1974, p. 179-192 ; Wirsing, R.G., International Relations and the Future of Ocean Space, Columbia, S.C.: University of South Carolina Press, 1974.
 - (3) The Cold War between Iceland and England was a good example of the difficulty on behalf of both nations to appropriate fully the benefits of the fisheries within the 200 mile limit of Iceland.

redefinition could come about through the proposed collective arrangement, which would be designed not only to facilitate the performance of the exploitation of the seabed but also to compensate for imperfection in the basic definitions of political jurisdiction. This, however, would not imply the necessity for extensive regulatory measures over ocean economic activity.

The third category deals with international goods defined by a low indivisibility and a low excludability (Box III) : goods or services provided by a state are rival in consumption and others can easily be kept from benefiting or be charged for benefiting. In other words, this category deals with international private goods.

It is the provision of these goods and services which account for many activities of governmental organizations. Thus, simply in order to be able to do what it cannot do, to do more or do more efficiently what it is already doing, a state may enter international arrangements and seeks the collaborative production of a particular task or service. International goods of this type would be provided through joint production schemes in order to take benefit of the economics of scale. Consumption, though, will be private.

The kinds of international organizational arrangements these situations could lead to is still of another variety. The purpose of these arrangements would clearly be to facilitate or enhance a particular national capacity, i.e., to enlarge the range of what is technically possible for each member in the performance of a specific task. In other words, the transformation curve for each state would shift outward, away from the origin, or at least no state would be left worse off as a result of some being better off.

Common examples of this type of international good are the outputs of international collaboration in areas of applied science and technology (1). Through a system of licences and patents, goods

(1) Nau, H.R., National Politics and International Technology, Baltimore: The Johns Hopkins University Press, 1974 ; Nau, H.R., Collective Responses to R.&D., Problems in Western Europe : 1958 and 1968-73, International Organization, Vol. 29, Nr. 3, Summer 1975, p. 617-53 ; Villecourt, L., Forms of Cooperation Problems of Science Policy, Paris: OECD, 1968.

can be fully appropriated. Joint production of national scientific and technological capabilities happens with the framework of the Joint Research Centre and the Committee for Research and Development of the European Community (1). Within the OECD, for example, specific member countries may participate project by project, without involving other OECD members not interested in a particular concern.

To sum up, many states will respond to problems and possibilities the international system poses by seeking the extension of national capacities through joint production facilities. These arrangements are producers of essentially private goods. Their first consequence will be to augment the ability of states to act in the international system. Common self-interest appears to be the main basis of production of this third type of international goods within international cooperation (2).

The last category of international goods are goods which approximate the characteristics of non-rivalness and low-excludability (Box IV) : the product of a state's activity is non-rival, in the sense that extension of that good to others is facilitated, even though others can be excluded or charged for it. In other words, this category deals with international goods produced by clubs that only protect their own members.

If states were of the impression that some other states would supply the good or service in any case, they would have no incentive to contribute to its production. But even if other states were willing to contribute, the opportunity cost of supplying the good or service to an additional state might well be negligible.

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- (1) For a good analysis of the coordination of science policy within the EEC see Brickman, R., National Science Coordination in the European Community, International Organization, Vol. 31, 1977, p. 473-496.
 - (2) This judgement is strengthened by King, A., International Scientific Relations : Introduction, Problems of Science Policy, Paris : OECD, 1968.

Finding itself in a situation of this kind, a state has a number of alternatives available : exclude others and ignore the social pressure which may result ; extend the good to others and absorb the costs ; cease the activity altogether ; or seek to organize the production of the good internationally with some cost-sharing devices.

This type of international good is quite frequently encountered in international relations. It will depend upon circumstances within the domestic and international system and upon the object and preferences which behaviour a state will acquire to consume this type of international good.

The kinds of international arrangements, if organized, would be designed to compensate for the decentralized structure of the interstate decision-making system by organizing internationally those national activities exhibiting non-rivalness. Their role, then, in addition to producing a specific good or service, would include at least the partial introduction of collective criteria into the international system. Cost-sharing schemes are often an important aspect of these organizations.

Outputs of EEC coordination policies in the field of agriculture, trade, money, aid, etc. may be considered examples of international goods exhibiting non-rivalness in consumption for the members of the group with possibilities of excluding others. Also in the area of science and technology, examples of this last category of good may be found. They concern the observation, surveillance, and monitoring of the earth's surface, the climate and the oceans. Data pictures of global weather systems, taken from U.S. satellites, and distributed through the World Weather Watch, or the various experiments carried out under the auspices of the Global Atmosphere Research Program are examples of this fourth category of international goods. These have concerned primarily one state, the United States, producing a good or service, and then sometimes, through international auspices, choosing to extend it to others and to absorb much of the cost of so doing. If the cost should become very high, there would be a case for some international cooperation.

with the inclusion of cost-sharing schemes. The American initiative to establish a U.N. Environment Fund which would include financing for monitoring is a good example.

In the present section we explored a classification of international goods and the relationship with international arrangements. The four-fold classification of international goods by no means exhausts the range of possibilities. We have only suggested it as a possible way for further analysis. This classification does, however, provide us with a better idea of the actual nature of international goods and consequently, with a better indication of the various possibilities of their provision. International goods can be provided through a national production, a joint production scheme, an intergovernmental organization or a supra-national design.

Table IV-3 suggests in a systematic way the tentative relationship between the type of international good and the type of international collaborative arrangement that would most likely be the outcome if the good or service should be produced or regulated on an international level. From this suggestion it does not follow that any kind of international good has to be organized, produced or regulated on an international level. The production of any of these goods can be left to the individual state. A whole range of possible actions are open to a state when it is confronted with any of these international goods. It may over- or underproduce the good or service as might be the case for goods of category II, or it may extend the good or service to others and absorb the costs as might be the case for goods in category I and IV, etc. ...

The purpose of this undertaking is to indicate that the specific nature of the various categories of international goods has some specific implications for the behaviour of the individual state. In some instances, a specific form of international arrangement could be a better and more efficient mode of producing or regulating that good.

Table IV-3 Relation between Categories of
International Goods and Interna-
tional Arrangements

Categories of International Goods	International Arrangements	
	Purpose	Form
Category I non-rivalness non-excludability (public good)	Compensation of both the decentralized na- ture of interstate decision-making and the definition of political jurisdiction and ownership	Supranational structures which introduce elements of collective de- cision-making and collective owner- ship (e.g. common policy substitutes for independent na- tional behaviour)
Category II rivalness non-excludability (commons good)	Compensation for the imperfections in property titles	International or- ganizations which introduce elements of collective ownership
Category III rivalness excludability (private good)	Facilitate or en- hance a particular national capacity	Inter-governmental organizations which coordinate national activi- ties (e.g., joint production schemes)
Category IV non-rivalness excludability (club good)	Organization of activities exhi- biting non-rival- ness	International or- ganizations which introduce collec- tive criteria into the interstate de- cision-making sys- tem (e.g. common policies integra- ting national be- haviour)

To resume, we have tried to suggest that the relationship between the provision of international goods and a possible international organization is more complex and diversified than Olson's theory of groups and organizations seems to imply. International arrangements may produce a whole range of outputs going from private goods over mixed goods to public goods. Therefore, one has to be careful in applying public good elements to international relations.

2. The Importance of Side-effects in International Cooperation

The main focus of the relationship between the provision of an international good and international cooperation is on the individual calculus of a country whether or not to participate in the production or regulation of the good. We already asserted that any sort of international cooperation is meant to accomplish common goals with respect to the provision or regulation of international goods. However, the provision of an international good of any of the four categories may also produce by-products in the sense of side benefits and/or side costs. A country will have to assess these side-effects to determine its actual behaviour towards international cooperation.

The specific nature of the international good determines the costs and benefits of an eventual cooperation. These costs and benefits are considered by-products of international cooperation and should be taken as elements within a country's calculus. Cooperation permits efficiency gains (or welfare gains). These gains are expected to result because a subset of nations which are affected by the good may have their marginal benefits taken into account when production decisions are reached. Another benefit concerns the increase in information and communication possibilities that cooperation may generate. These side benefits may include data gathering and analysis, facilitation of inter-state consultation, suggestions for coordination etc. Benefits may also come from scale economics. To the extent that cooperation increases beyond those levels associated with independent adjustment, scale economics can be attributed to the operation of an international arrangement.

For example, the operation by two nations of a water treatment plant, which serves to purify the water of a commonly shared lake, may be less expensive per unit of operation than the construction of two separate plants. The reduced costs on those units that would have been supplied by the independent provision decision comprise the scale economy benefits. All these side-benefits hold for all four categories of international goods.

On the cost side, the operation of international arrangements is usually associated with large expenditures on decision-making costs, enforcement and interdependency costs (1). As to the interdependency costs, as a nation joins an international arrangement, a loss of autonomy and flexibility may be experienced. This loss of autonomy may impose costs on the operation of national policy whenever conflict between national and international goals exists. In cases of conflict, enforcement costs in terms of military force, economic sanctions, etc. may have to be expended by the international arrangement. These costs are external to the extent that the state expects costs as a result of the actions of other nations over which it has no direct control (e.g., economic boycott of Rhodesia, arms embargoes, etc.). Decision-making costs are often a function of a state's participation in the international arrangement, i.e., the decision rule required for agreement when a state participates in this activity. Consequently, as the number of states required to agree increases, the decision-making costs will increase too. also the bureaucratic, non-market costs should be considered part of these decision-making costs.

Some of these side-effects (positive or negative) are uncompensated in the international system and can be viewed as international externalities. As a consequence, some international arrangements are then also seen as institutional structures for internalizing those international externalities. However, it is quite important in this context to look at the relevant trade-offs involved in designing policies and institutions to internalize international externalities. The mere existence of an international externality does not lead to the conclusion that it should be internalized at

the highest level of government possible. It is possible that some of the international goods are better handled by bilateral or regional agreement at a more decentralized level of decision-making than by an international organization. Thus, it is particularly important to recognize that merely showing that the market is failing to perform perfectly or that there is some scope for gain from coordination of national policies is not sufficient to establish a clear case for international action. Not every externality needs an international body to deal with.

Therefore, it is crucial to analyze specific externality problems with respect to the basic trade-offs involved in deciding at what level they should be handled : 1) the nature of the distortion, externality - does it exist, is it worth the cost of doing something about it and 2) the efficiency of organizations designed to deal with the spillover. Is there a rationale for an international regulation or an institutional structure for internalizing international externalities?

In other words, the problem of the public good element in international relations arises from a failure of the decentralized decision-making system to operate efficiently. This failure comes about as a result of the interdependence between or among community members, and the inability of a decentralized system to compensate members for these relevant interdependent effects. Whether an externality should be internalized and by what means it should be internalized, should depend upon the relative costs and benefits of internalization. Whenever the additional costs of internalizing an externality are greater than the additional benefits derived from creating and/or implementing an internalization mechanism, then it is inefficient to do so. This suggests that more attention should be given to approaching international policy issues in the sequence of their likely cost-benefit ratio rather than attempting to indiscriminately rush after the internalization of all international externalities.

To summarize, the complexity of the characteristics of international goods suggests that international arrangements may serve different purposes and consequently, may have different forms. Still, some general conclusions can be drawn as to the individual calculus of a country whether or not to participate in international cooperation. It should enable us to assess any international arrangement which provides an international good. It is obvious that the basic reason of the existence of any international arrangement is the provision of a joint gain. The task for institutionalizing the provision and/or regulation of any type of international good is to ensure that this cooperative joint gain aspect prevails. An important obstacle to the creation or preservation of joint gain situation is given by the economic reasoning which purports that 'market distortions' may lead to disruptive conflicts over the distribution of gains or the sharing of costs. These ensuing conflicts will often destroy the potential for joint gain.

Besides this joint gain element in any international arrangement international cooperation may also provide by-products in the sense of side-benefits and side-costs. These side-effects may play an important role in a country's decision-making process.

Finally, the mode of organizing the provision and/or regulation of a good on the international level, is based on the comparative advantages of each in terms of different basic values. Market methods promote efficiency in appropriate circumstances, such as the absence of major costly externalities and indivisibilities. Moreover, they depoliticize the decisions in any allocative process. On the other hand, markets work within a given initial distribution which is not always acceptable to participants. Organizational devices involving representation and politicization of differing interests may be introduced into the process of allocation. This mode of organizing the provision of the international good may result in a system of collective decision-making (1).

The relationship between the type of international good and international cooperation seems more complex than it has often been

(1) Auster, R. and Silver, M., Collective Goods and Collective Decision Mechanisms, Public Choice, Vol. 14, Spring 1973, p. 1-17

thought. Here we have only suggested that more attention should be given to the likely cost-benefit ratio, in approaching the provision and/or regulation of any type of international good.

3. The Relevance of a Public Goods Perspective in International Relations

In this concluding section we round up our discussion of the use of the public good concept in international cooperation. As has been amply discussed in the first part of this chapter, the public good is an abstract concept which has been introduced from economics into the analysis of political phenomena. We indicated that the very nature of the good leads to failures of decentralized decision-making so that political and social organizations are often required to cope with collective good situations. The existence of public goods in international relations indicate similar problems of collective action at the international level and, henceforth, may create the need for cooperation between states. However, arguing within the framework of the rational actor assumptions, some central points must be made clear about the public goods approach to International Relations.

A first point is related to the use of the concept of public good in an analysis of international cooperation. The focus should be put on a clear definition of the actual relationship between a collective arrangement and the nature of its output. Olson's one-to-one relationship between an international organization and a collective good output has been misleading and misinterpreted in the literature. Moreover, in present research we are often left with ambiguous conclusions as to the explanatory and predictive power of such a public goods approach to international relations. Therefore, a more precise and less generic definition of the task performance of a collective arrangement between states is required, i.e., what does an arrangement provide, how is it provided, for whom and what is its impact? In other words, the nature of the output of an arrangement must be well defined.

To remedy the conceptual problem of the collective good concept in international relations we introduced a suggestive distinction of four categories of international goods, i.e., international public goods, international 'commons' goods, international private goods and international club goods. We further explained that each of these four categories of goods has specific problems of allocation and distribution of resources. Those problems can be solved in varying forms of cooperation among states. The actual behaviour of an individual state towards the realization of such international goods is assumed to be guided by the rational actor assumptions.

A second point that should be borne in mind is related to the variety of outputs that a collective arrangement between states may produce. International arrangements often provide joint outputs of different categories of international goods. In other words, arrangements at international level may provide and/or regulate a number of goods. For instance, a military alliance, such as NATO, provides a joint output of different goods. It provides the public good of deterrence, the club good of protection and the private good of joint production and resources from military infrastructure. The existence of joint outputs may influence the behaviour of a state towards such an organization.

An important aspect in this perspective is the distinction we make between the basic services and the specific services of international organizations. Often the generic task performance of an international organization contains a public good element, while the practical applicability to implement the working of the organization has an impure public good character. In many instances of international arrangements public goods are provided in the sense of the abstract concept of non-rivalness and non-excludability of the basic information, the basic research and the basic task performance. However, from the moment an organization elaborates its facilities to actually provide and/or regulate the goods, impure public goods are often introduced into the analysis. The facilities of these collective arrangements can be public goods, private goods, commons goods and club goods.

Thus, any scientific attempt to analyze international arrangements from a public goods perspective should take into consideration that arrangements may provide simultaneously goods with differing characteristics and that international goods may be dealt with in differing frameworks of cooperation. In sum, if a public goods approach is to be applied to international cooperation, a thorough analysis is needed on the number of international goods involved, the nature of the different goods and by what kind of framework the goods are actually provided (i.e., the mode of allocation, distribution and cost sharing). This, of course, would mean a series of monographs of international organizations or detailed studies of international goods.

It is not the purpose here to present a long agenda of further research possibilities in this area. We only want to suggest a way to assess international arrangements and international issues from a public good perspective. It is believed that a better understanding of a nation's behaviour towards international cooperation could be arrived at if the above reasoning should be accepted. Let me illustrate this with a few examples of research possibilities.

Take, for instance, the area of Research and Development. It has long been recognized that scientific knowledge is a public good in the fundamental sense that once produced, its benefits can be enjoyed without diminishing its usefulness to others. On the other hand, most of the practical application of knowledge in countries takes place through private firms which typically attempt to exclude other users for the purpose of maximizing their own profits. They provide private goods.

In an international setting national governments have multiple, sometimes conflicting objectives in the R&D area. They recognize the need to support fundamental research which no single firm would find profitable because of insufficient excludability but, which is nonetheless of benefit to the citizens. They also often have an interest in keeping such information from flowing freely to foreigners : they wish to aid their own firms in the international market-place as well as to gain maximum general political and economic influence from proprietary control of publicly-supported research

and development. This, in turn, leads other countries to take competitive or at least defensive positions. The ensuing competition leads to a smaller aggregate advance in knowledge than might otherwise be the case. But national governments also understand that cooperation in the pursuit of R&D can in principle contribute to the efficient provision of international goods by reducing inefficient redundancy in resource expenditures, allowing the realization of comparative advantage, and in some cases overcoming the high costs of isolated efforts.

Recent experience appears to confirm strongly the rivalry of nations, rather than a tendency for cooperation. Furthermore, it seems that the individual nations can often be thought of virtually as competing firms. Moreover, the excludability of R&D by performing nations is sometimes quite high. In other words, commercial interests and other national rivalries appear to have blocked extensive international cooperation. This brings us to the assertion that most of the R&D practical applications can be defined as international private goods or international club goods, while fundamental scientific research can be considered a public good. This distinction has an important impact on the way the mode of allocation, distribution and cost-sharing is to be assessed.

For instance, a public goods approach to the study of internationally collaborative R&D arrangements (e.g., OECD, IEA, CERN, Euratom, ENEA, etc.) provides an interesting path of research. Interest should then first be directed to a discussion of the nature of the specific good(s) the organization provides. This should be followed by an analysis of the mode of allocation, distribution and cost-sharing of the organization. In the perspective of these two main lines of reasoning, the behaviour of an individual state towards a specific international good should be assessed.

A public goods approach to an analysis of the Oceans problem is another broad area of research. Problems of ocean resource exploitation, ocean pollution and the concept of the oceans as the common heritage have long been considered common-pool problems. The funda-

mental cause of any common-pool, as has already been indicated, is the difficulty of identifying and asserting property rights over a resource. As a consequence, each country with access to the resource has an incentive to exploit currently as much as it profitably can, thus neglecting the effects of its actions on resource availability in the future. These common-pool features of resource exploitation may create divergencies between private and social costs and benefits and, as a consequence, some forms of collective agreements may be required to regulate the resource exploitation.

In the law of the sea negotiations the resources of fish, oil and manganese nodules have received much interest. A research in this area could reveal the relevant trade-offs in designing arrangements to regulate the exploitation of these ocean resources. For instance, the exploitation of highly migratory fish that swim through many national waters or spend their lives in fresh water far at sea (e.g., tuna, salmon), is an international commons good that needs to be regulated at international level. On the other hand, the exploitation of coastal fish only calls for national fishery regulation. The extension of the national jurisdiction to the 200 mile zone re-defined the property rights over this resource. In other words, the problem of the exploitation of coastal fish was settled. Also the control of deep seabed resources is considered a commons good. Does that imply that the exploitation of manganese nodules requires international regulation? Nodules are not like fish since they do not move around and since the future stock does not depend on current exploitation. Focus of research should thus be put on the relationship between the specific nature of the good and the mechanism for dealing with this resource. This reasoning applies for a number of problems in the Oceans area.

Actually, we have only mentioned a few examples of further research possibilities. However, we believe that all international organizations, programs or arrangements can be studied from this international goods perspective. It is supposed to give us a better understanding of the behaviour of an individual state towards international cooperation. The area of international development aid will be taken to assess this approach.

Conclusion

In this chapter we have assessed some elements of Olson's public goods theory. In a first section we clarified the public good concept as it was developed in economic theory. It became clear that the elusiveness of the pure public good induced further developments of the theory by introducing the concept of impure public good. Moreover, the distinction with similar concepts was stressed. This discussion demonstrated that the public good concept is more complicated and intricate than most analysis makes us believe.

In a second part we assessed the Cournot model of independent adjustment group behaviour on which our own analysis of public good in international relations is based. It was shown that the non-cooperative Cournot model of public good allocation calls for a collective provision of public goods. The analysis clearly indicated that Olson's conclusions of his theory are to be understood from this independent adjustment behaviour.

In the last part of this chapter we discussed the usefulness of the public good concept to an analysis of international cooperation. To remedy some of the problems that occurred in the analysis of international relations from a public goods perspective, we introduce a suggestive distinction of four categories of international goods. This helped to understand the actual relationship between international arrangements and the specific nature of their outputs. And because our interest is on the individual calculus of a country whether or not to participate in the realization of an international good, by-products of international cooperation in the sense of side benefits and/or side costs were introduced. To resume, a public goods perspective to international cooperation can be useful if we take into consideration that arrangements may provide simultaneously goods with differing characteristics and that international goods may be dealt with in differing frameworks of cooperation. These two elements do have an impact on the actual behaviour of states towards international cooperation.

In the next chapter we will add two main theoretical qualifications to the analysis. First, we will introduce the element of preferences into Olson's analysis of the production of a public good in international relations. Secondly, we will introduce the element of economics of scale into the analysis of joint production schemes in international relations. Both theoretical elaborations will have an impact on the behaviour of small states towards international cooperation.

CHAPTER V THEORETICAL QUALIFICATIONS OF A PUBLIC GOODS APPROACH TO INTERNATIONAL RELATIONS

Introduction

In this fifth chapter we will explore two theoretical qualifications of problems of collective action in international relations. In a first section it is argued that Olson's exploitation thesis, i.e., large countries are exploited by small ones with regard to the cost-benefit ratio of the public good, is not completely accurate. Under certain conditions the disproportionality of burden-sharing in the production of the public good is reversed, so that the cost-benefit ratio of the smaller country may be greater than that of the larger country. In other words, Olson's exploitation hypothesis is qualified by the introduction of differential preferences of countries towards the consumption of a public good. This is shown by concentrating on the reaction process in public good theory. The discussion of the equilibrium conditions for public good output will demonstrate results which contrast with Olson's model.

The second section widens Olson's analysis of public goods in international relations by introducing a distinction between national and international arrangements to achieve a country's objectives. This is done by introducing an international cooperation model, very much inspired by Ruggie. The main conclusion of the model is that there is an inverse relationship between the ratio of resources spent on international arrangements and resources spent on national arrangements and the total level of national resources to attain a specific objective. This model certainly adds another element to the analysis of the behaviour of states towards international cooperation.

In short, while Olson's analysis and its qualification are based on the study of the consequences of an international public good on the behaviour of states, Ruggie's model is based on the impact of the returns to scale in the production of national and international arrangements on the behaviour of states.

A. A Reaction Process Model : A Qualification of Olson's Public Goods Model

Introduction

In the model that guides the investigation of the NATO alliance Olson maintains that the country with the relatively larger output prior to the reaction process always bears a disproportionately larger share of the cost of providing the public good relative to a country with a smaller output before the process. He concludes that in public good situations larger countries are exploited by small ones with regard to the cost-benefit ratio of public goods.

However, it will be argued here that Olson's exploitation thesis is not completely accurate. Under certain conditions the income effect of a public good reserves the disproportionality of burden sharing, i.e., the country with the relatively smaller output prior to the reaction process may bear a disproportionately larger share of the public good's cost after the process. Thus, in contrast to Olson's model, the cost-benefit public good ratio of the smaller country may be greater than that of the larger country.

To minimize these unexpected costs, or to introduce certainty with regard to costs, a smaller country may voluntarily engage in international cooperation with a larger nation about what constitutes the proper supply of various public goods. In other words, cooperation may occur because the country with the relatively large isolation output can have a very weak interest in marginal increments of the public good, while the country with the relatively small isolation output can have an extremely strong interest in marginal increases of the public good.

In this chapter we stress the existence of a rationale for international cooperation that relies upon the recognition of varied preferences. Drawing upon the Cournot model of group behaviour it is argued that the recognition of mutually advantageous exchange may lead to international cooperation between larger and smaller countries. This implies that a smaller country may have an incentive to

cooperate with large ones when providing a public good. Size is thus not the only element in the analysis of cost distribution of a public good (1).

1. The Independent Adjustment Process

a. Assumptions

As we have noted in Chapter I, our general analytics are based on the assumptions of the single actor model of economic self-interest. While we assume this in a reasonable approach to elaborate on Olson's public good model, we are quite aware of the limitations of such an approach in analyzing international cooperation.

The economic model we use, differs in some points from the one employed by Olson. First, it can include income effects. Income effects, i.e., shifts in production and consumption possibilities, are important in determining eventual equilibrium position. In other words, the international provision of any good, either public or private, has an effect upon the state's real income. Secondly, reference is made to goods other than public goods, i.e., private goods, since the production and consumption of goods of all kinds are intimately interrelated. International cooperation does not provide exclusively public goods. Thirdly, we do not assume equal taste patterns, i.e., countries may have different preference patterns with regard to the supply of public goods.

The economic model postulates two countries (A and B), which are rational actors with given preferences and production possibilities, and two goods of which good (X) has the characteristics of a public good and good (Y) of a private good. The use of a production constraint enables the analysis to include income effects and to refer to private goods as the numéraire to measure the opportunity cost of providing the public good in terms of the private good. The model further assumes independent adjustment, the absence of

(1) See also Brown, S.N., Price, D., and Raichur, S., Public Good Theory and Bargaining between Large and Small Countries, International Studies Quarterly, Vol. 20, Nr. 3, September 1976, p. 393-414.

bargaining between countries and the existence of a pure public good. Briefly the model is placed within the framework of a Cournot model of group behaviour.

In Chapter IV it was said that the impact of a country's public good production on another country was interpreted as increased income. When countries are aware of an increase in income, it affects their decision about how much of the public good they should provide through their own efforts. Hence, states adjust their own provision of the public good to account for the amount of spillover, which is the amount of another country's public good production. This constitutes the reaction process in public goods theory.

In arriving at the conclusions cited earlier, Olson assumes that there is no cooperation among the parties involved, i.e., no cost sharing arrangements are permitted and each country bears the entire costs of any increase in the amount of the public good which it initiates. The amount of the public good provided is thus determined through a process in which the country reacts independently to the behaviour of others in deciding how much of the public good to provide by itself. The noncooperative nature of this process is crucial to Olson's exploitation thesis, for this is based upon an examination of the properties of the equilibrium of the noncooperative process. This process is now illustrated.

b. A Public Good Reaction Function for One Country

From the Cournot line we constructed in Chapter IV a public good reaction function may be derived. Figure V-1 illustrates the public good reaction process for one country (A). We make the assumptions of a linear income expansion path and a constant production possibility curve to simplify the derivation of the reaction function. In Quadrant I of Figure V-1, the horizontal axis measures the amount of public good that may be produced by country A ; the vertical axis measures the amount of private good that may be produced ; and the line PP' represents the different combinations of the two goods that may be produced. Line E_0E_g is the Cournot line

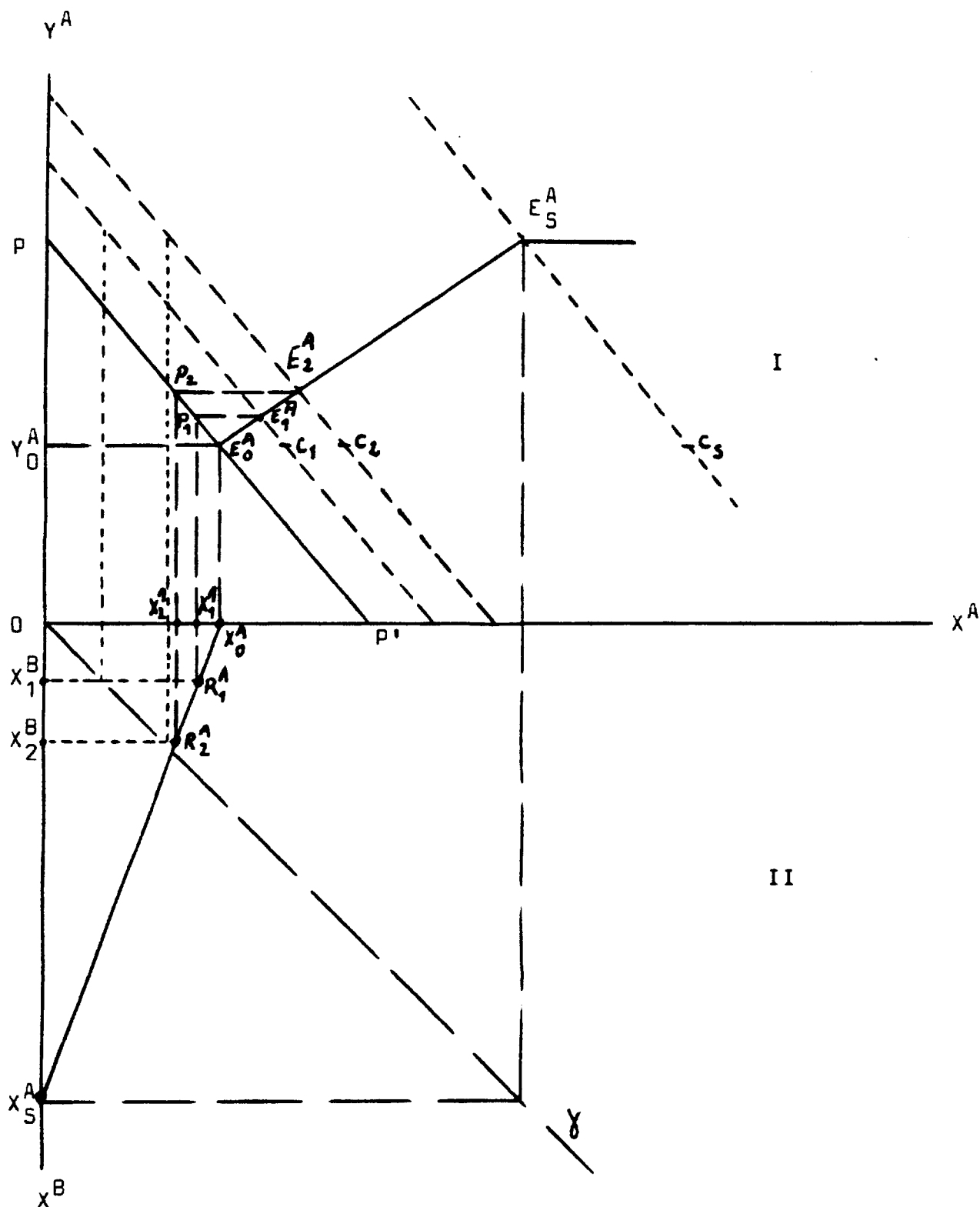
and every point on the path represents utility maximization for lines parallel to PP' . The vertical axis of Quadrant II measures the amount of spillover, i.e., the amount of the public good provided by country B, while the horizontal axis is common to Quadrant I.

The reaction curve must describe at least two conditions : 1) the amount of public good production when spillover is zero, and 2) the nature of the relationship between spillover and adjustment in a country's public good production. In Quadrant I, point E_0^A is country's A isolated optimum. It represents a particular production combination of private good and public good that maximizes benefits when spillover is zero (x_0^A, y_0^A). Of course, spillover is equal to zero only when no other country produces the same public good.

Now suppose that country B is providing OX_1^B of the public good. With the help of a 45° degree line (γ), this amount is plotted on the horizontal axis. Aware of this spillover, country A will not consume at point E_0^A but at point C_1 , which is to the right of E_0^A and below the Cournot line. This is only a consumption spillover and there is no resource transfer. Country A treats the amount of spillover ($OX_1^B = E_0^A C_1$) as constant. To maximize benefits, the country must consume on the Cournot line. To do this, country A must reduce its own public good production. Therefore, it decreases its public good production to point P_1 on the production possibility curve PP' , which stands for an amount of OX_1^A of the public good. Point P_1 enables country A to consume at point E_1^A of the Cournot line. It is apparent that the country is producing less of the public good after the adjustment than it was before. It dropped its public good production from OX_0^A to OX_1^A . Consequently, we find a point of the reaction curve, i.e., R_1^A , which gives the amount of the public good A will produce (OX_1^A) when B is providing OX_1^B of it.

When country B provides OX_2^B of the public good, the consumption spillover amounts to $E_0^A C_2$. In order to maximize its benefits, country A will reduce its own public good production to P_2 and will find a new equilibrium on the income consumption path at point E_2^A . In other words, consumption spillover of OX_2^B amounts to a public good production of OX_2^A by A. Still another point on the reaction curve is found, i.e., R_2^A .

Figure V-1 Public Good Reaction Function for One Country

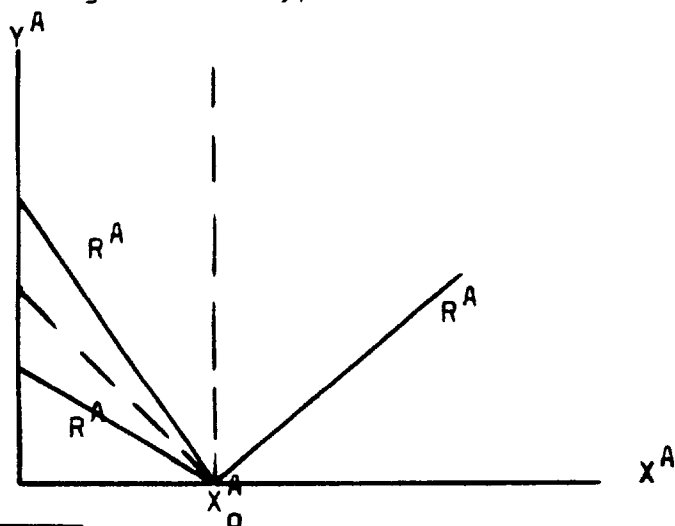


This establishes the nature of the relationship between public good production and spillover. The relationship is inverse and therefore a sufficient amount of spillover could reduce A's public

good production to zero. In the context of a production constraint, the production of the maximum amount of one good and no production of the other is a corner solution. A corner solution and maximization of utility exist in the reaction process when, as in Figure V-1, the country produces at point P but consumes at point E_S^A . Thus, the amount of spillover necessary to create a corner solution must equal PE_S^A which is plotted on the vertical axis of Quadrant II as X_S^A (i.e., $E_0^A C_S$).

The slope of the reaction curve (α) is the marginal rate of adjustment in a country's public good production for every unit of spillover. And because the reaction curve is derived from the Cournot line, the slope of the reaction curve will depend upon the income elasticity of the demand for the public good. In the discussion of the Cournot model reference was made to the three classes of goods, normal, inferior, and superior. These categories of goods have corresponding slopes of the reaction curve: for a normal good the slope of the reaction curve is $0 < \alpha < 1$; for an inferior good it is the slope $\alpha > 1$; and for a superior good it is the slope $\alpha < 0$. Three representative reaction curves are shown in Figure V-2. It is to be expected that most public goods will have normal income elasticities (1).

Figure V-2 Types of Reaction Curves



(1) In 'The Logic of Collective Action', Olson ignores income effects, considering only the case in which the slope of the reaction curve is ($\alpha = 1$). In Olson, M. and Zeckhauser, R., op.cit., p. 270, some attention is paid to income effects.

The actual value of the reaction curve is affected by the contour of the production possibility function and the shape of the Cournot line. The Figures of V-3 illustrate the effect of the contour of the transformation function on the reaction curve. In all figures the Cournot line is linear. In each instance, the consumption spillover clearly reduces public good production. However, the opportunity cost is constant in Figure V-3a, increasing in Figure V-3b and decreasing in Figure V-3c. In other words, a linear production possibility curve implies a linear reaction curve, a concave production curve a concave reaction curve, and a convex production function a convex reaction curve (1).

Figure V-3 The Effect of the Production Possibility Curve on the Reaction Curve

Figure V-3a

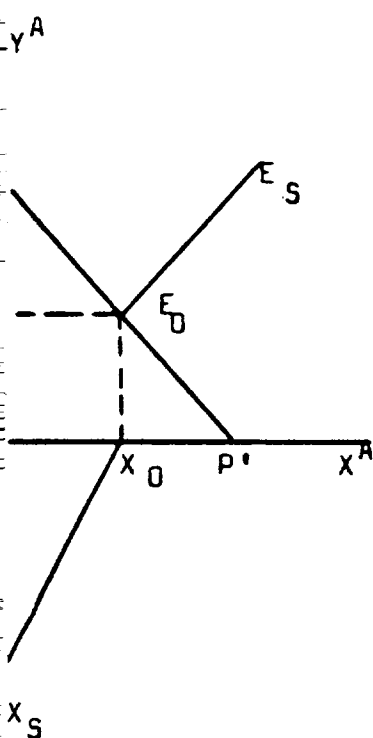


Figure V-3b

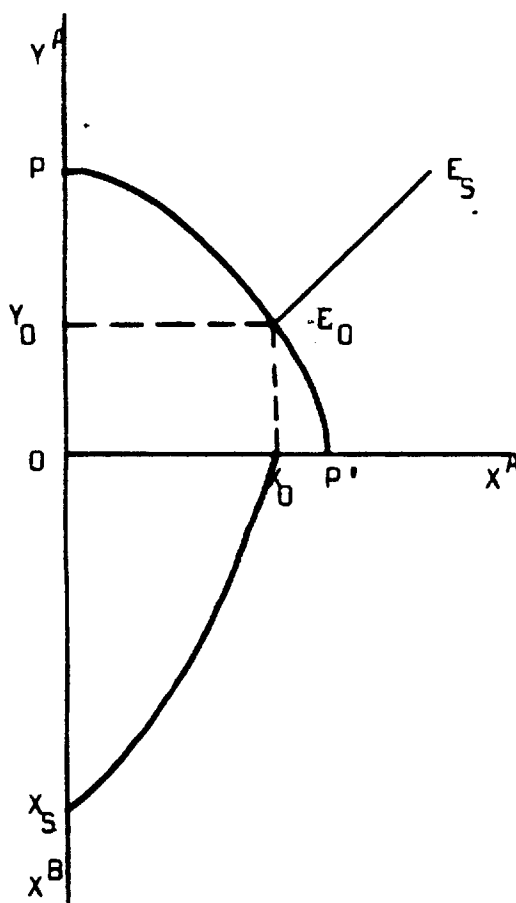
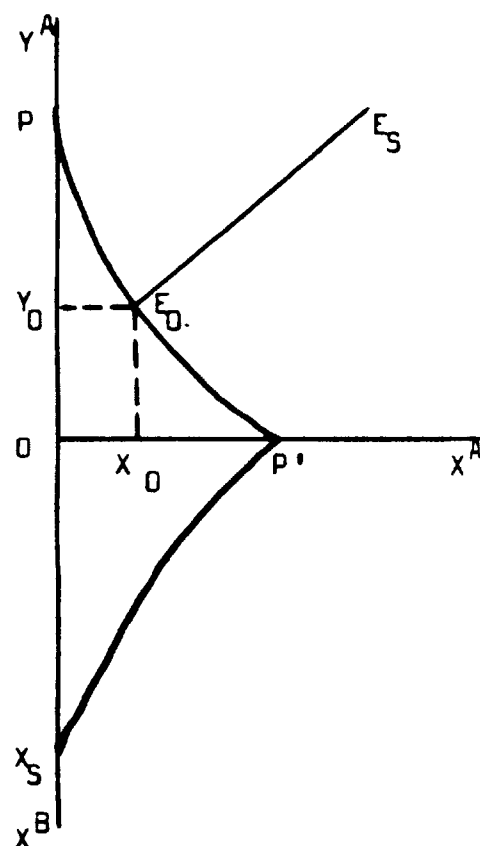


Figure V-3c



(1) There is a tendency in the literature to draw concave reaction curves. Concave production functions constitute the standard assumption. As suggested in these figures, other cases may be relevant too.

The Cournot line also affects the reaction function. Figures V-4a, V-4b and V-4c illustrate this. The production function is linear, but three different Cournot lines are drawn. If the Cournot line is linear, such as E_0E_s in Figure V-4a, then the reaction curve too will be linear. If the rate of increase of public good consumption is decreasing, such as depicted in Figure V-4b, the reaction curve will be concave toward the origin. The rate of decrease in public good production is increasing. If the rate of increase of public good consumption is increasing, such as E_0E_s in Figure V-4c, the reaction curve will be convex toward the origin. The rate of decrease of public good production is then decreasing

Figure V-4 The Effect of the Cournot Line on the Reaction Curve

Figure V-4a

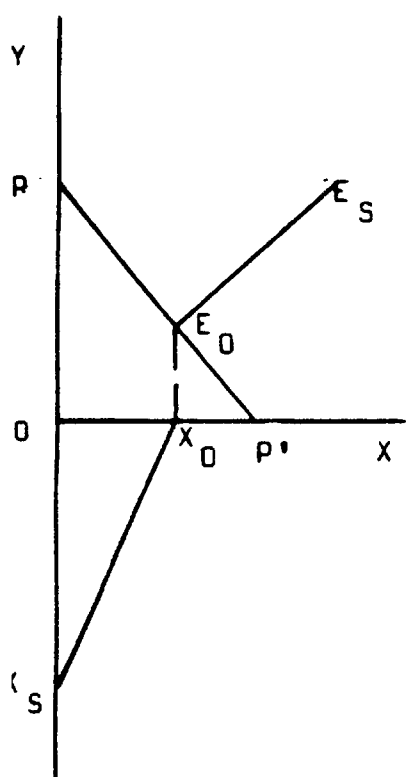


Figure V-4b

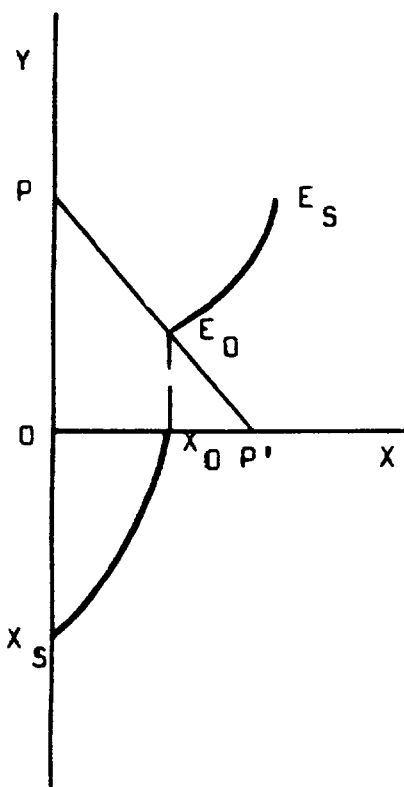
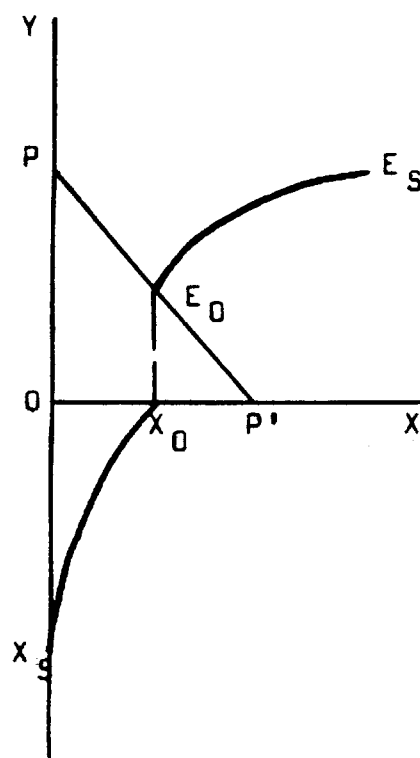


Figure V-4c

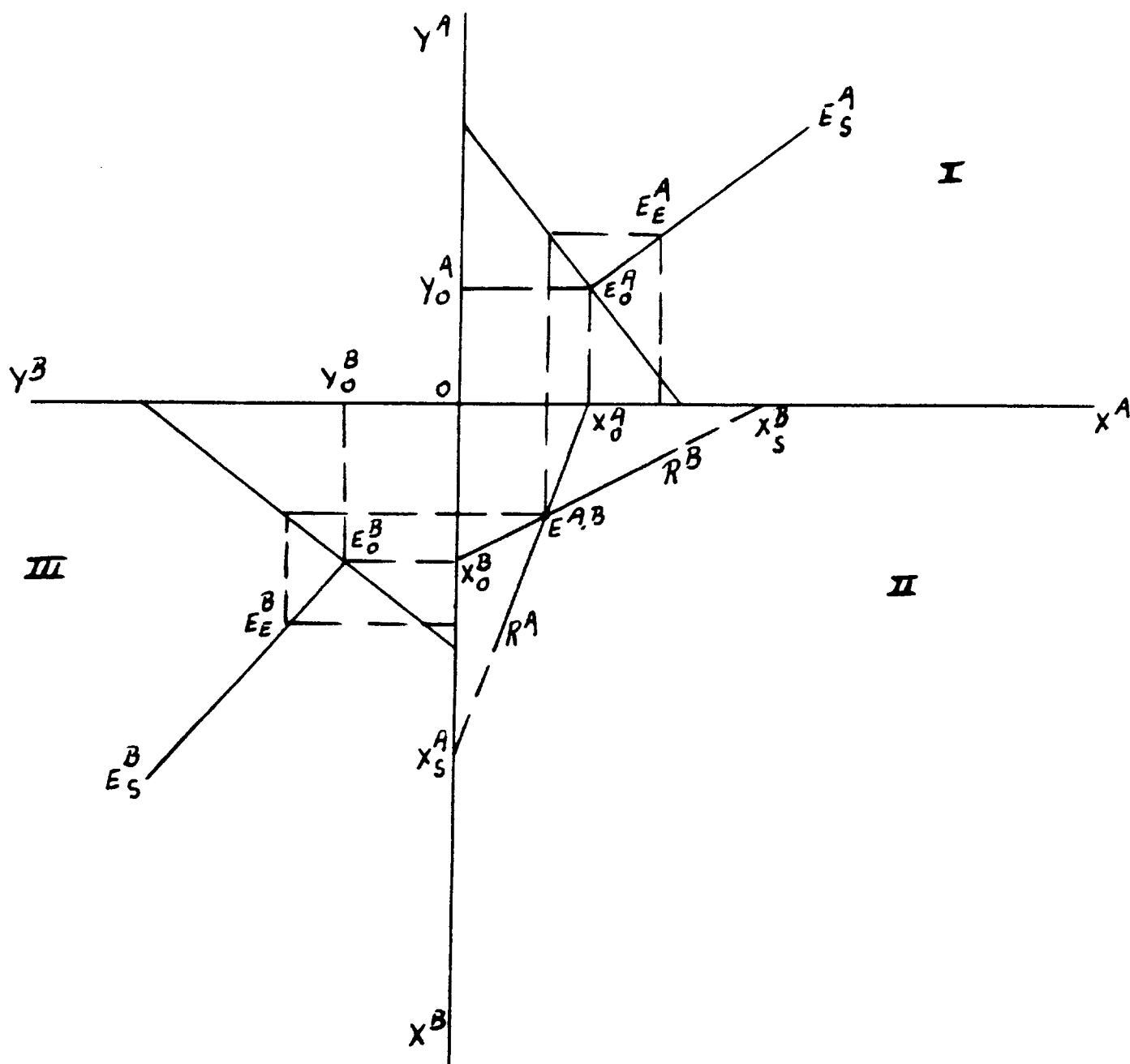


For the further course of the analysis we will use linear production possibility curves and linear Cournot lines. These assumptions, however, do not detract from the analytical insights provided by the application of the reaction process to the public goods theory.

c. The Reaction Process between Two Countries

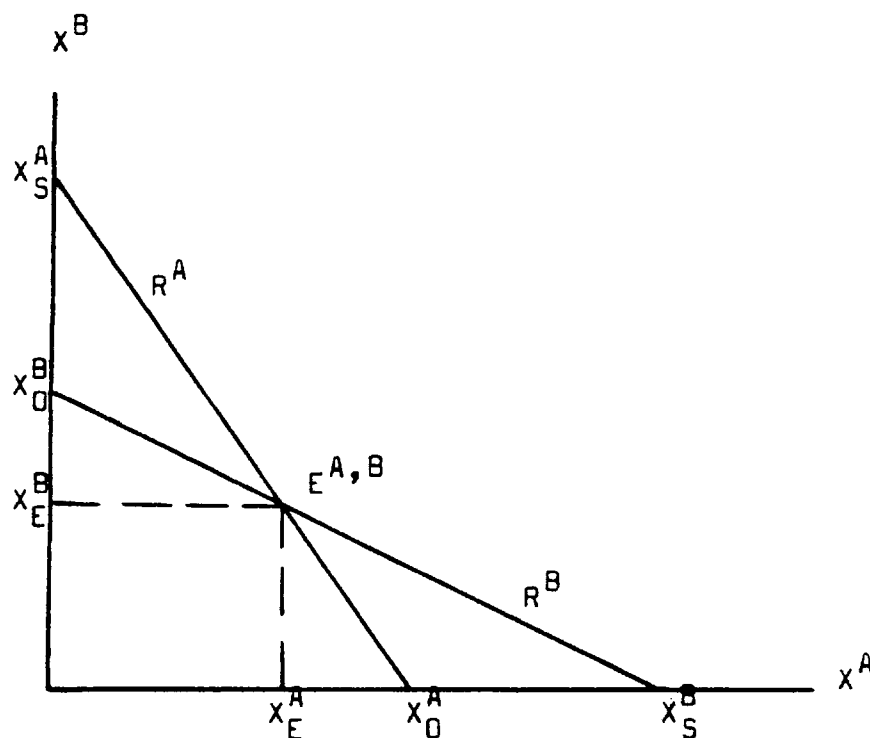
The case in which two countries are independently reacting to one another is illustrated in Figure V-5. Quadrants I and III represent the Cournot lines of countries A and B. E_0^A stands for country A's isolated equilibrium with a product mix (x_0^A, y_0^A) , while E_0^B gives the commodity bundle of B's isolated equilibrium (x_0^B, y_0^B) . In Quadrant II reaction curves for both A and B are drawn (R^A, R^B).

Figure V-5 Reaction Process between Two Countries



The reaction process may be considered as an iterative process. The two countries act independently, but concurrently. Country A takes the public good production of country B in the preceding stage of the iteration as given when deciding how much it wants to produce. The independent adjustment process will reach an equilibrium $E^{A,B}$, where the reaction curves intersect. The equilibrium results in A producing x_E^A of the good and B producing x_E^B of the good. Both countries consume an amount of the public good equal to the sum of these two productions ($x_E^A + x_E^B$) (Figure V-6).

Figure V-6 Public Good Equilibrium between Two Countries

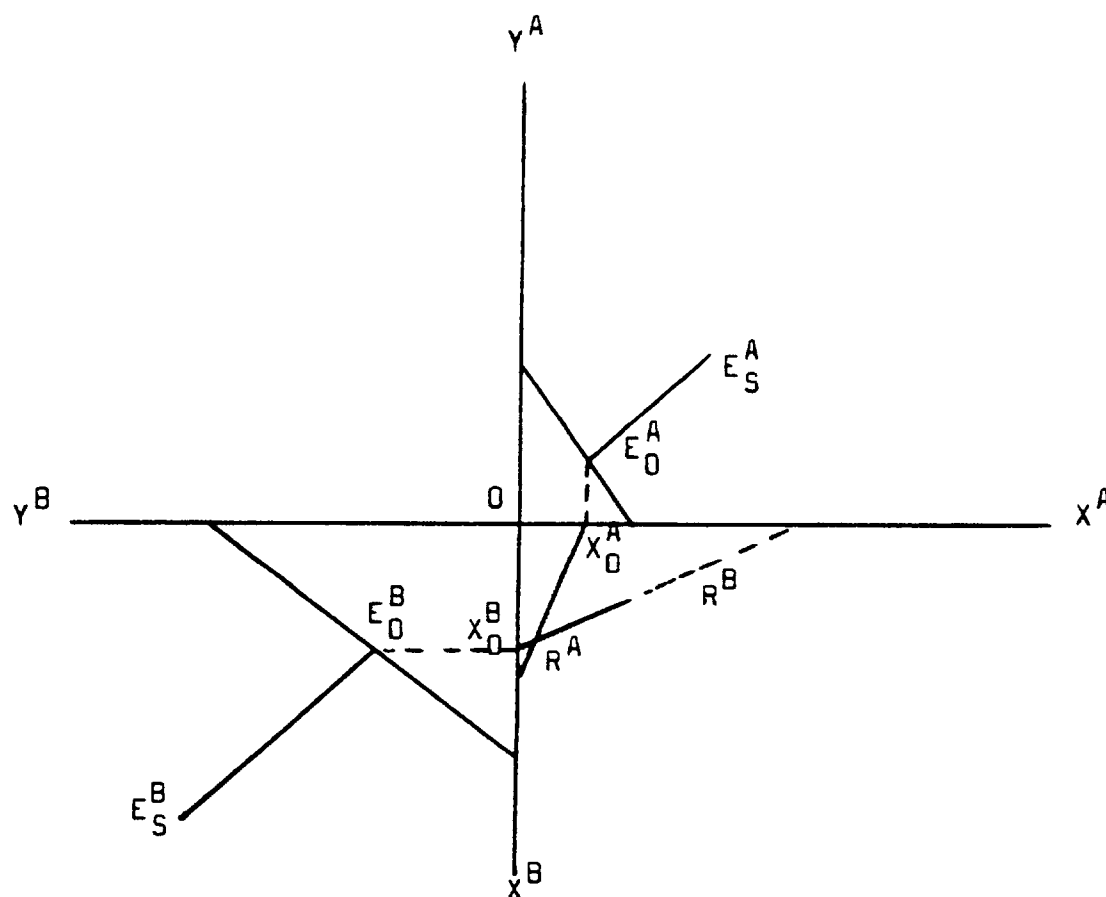


2. The Determinants of the Reaction Curve

Attention may now be turned to examining the relationship between the slope of the reaction curve, factor endowments and preference functions in our two-country model.

CASE II : We assume that each country's factor endowments are different, but that the countries have equal preference functions. Both Cournot lines have the same slope so that, given identical production functions, the slope of each country's reaction curve is equal to that of the other, i.e., $\alpha = \beta$ (Figure V-8). Olson's public good model can be framed in this second case.

Figure V-8 The Effect of Different Factor Endowments on the Reaction Process



These two cases clearly indicate that the amount of public good at isolated equilibrium (X_0) and the amount of spillover necessary to ensure a corner solution (X_S) are important elements in determining the reaction curve. In other words, not only factor endowments, but also preference functions of countries are criteria to analyze the cost distribution of public goods between countries and, consequently, to determine a public good equilibrium.

3. Equilibrium Conditions for Public Good Output

After a discussion of the determinants of the reaction curve, attention may now be turned to an analysis of the system's equilibrium conditions in general. A formula exists to predict the amount of public good production in any country given the income effect of spillover. The formula for country A is : $x_E^A = x_0^A - \alpha(x_E^B)$ (1)

where : - x_0^A equals the public good output of A prior to spillover, i.e., the public good production at isolated equilibrium

- α equals the slope of the reaction curve R^A
- x_E^B equals the amount of spillover from B
- x_E^A equals the equilibrium public good output of A

The formula for country B's adjusted production is similar to that shown in Equation 1 :

$$x_E^B = x_0^B - \beta(x_E^A) \quad (2)$$

Equations 1 and 2 represent a system of two linear equations in two variables, and the solution of the system renders the equilibrium value of the public good production in countries A and B. The system may be solved by the standard method of comparison :

$$x_E^A = \frac{x_0^A - \alpha x_0^B}{1 - \alpha\beta} \quad (3)$$

$$x_E^B = \frac{x_0^B - \beta x_0^A}{1 - \alpha\beta} \quad (4)$$

The numerators of the right side of equations 3 and 4 give the equilibrium conditions :

$$x_0^A - x_0^B \quad \text{vs} \quad \alpha x_0^B - \beta x_0^A \quad (5)$$

$$\alpha x_0^B - \beta x_0^A = k$$

$$\text{if } x_0^A - x_0^B = k \quad \text{then} \quad x_E^A = x_E^B \quad (6)$$

$$\text{if } x_0^A - x_0^B > k \quad \text{then} \quad x_E^A > x_E^B \quad (7)$$

$$\text{if } x_0^A - x_0^B < k \quad \text{then} \quad x_E^A < x_E^B \quad (8)$$

With these equilibrium conditions we can now examine the relationship between the equilibrium public good output of the two countries, given the relationship between the isolated public good output and that between the slope of their reaction curves. Four cases are examined.

CASE I : Assume that A's isolated public good output is less than B's isolated production ($x_0^A < x_0^B$), and that the slope of country A's reaction curve is greater than country B's slope $\alpha > \beta$.

From equation 5 it is obvious that $x_E^A < x_E^B$, i.e., the independent adjustment process will result in an equilibrium where country A will always produce less than country B. The reaction process results in lower production levels of the public good for both countries, but A's reduction of the public good production will be greater than B's decrease. In other words, the country with the lower public good output at isolation and lower preference for the public good relative to the private good, will always produce less than the other country (Figure V-9a).

In case the isolated public good output of the country with the greater isolated public good output (B) equals or is greater than the spillover necessary to reduce the other country's production to zero, a corner solution will be reached ($x_0^B \geq x_S^A$). Equilibrium output then equals B's isolated public good production. Country A will have a free ride, producing nothing of the good and consuming an amount x_0^B of the public good (Figure V-9b).

Figure V-9 Public Good Equilibrium ($x_0^A < x_0^B$, $\alpha > \beta$)

Figure V-9a

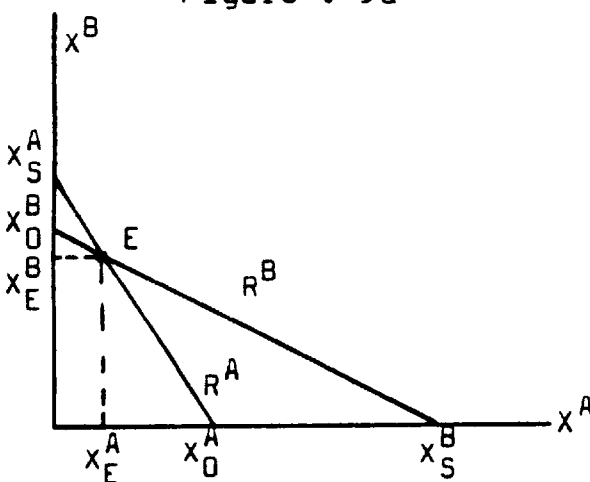
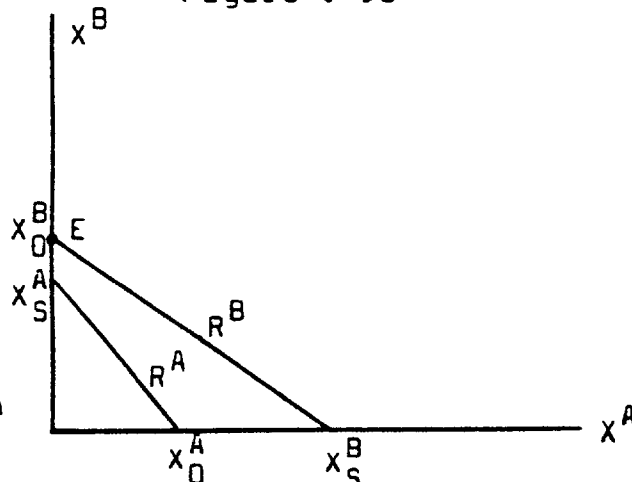


Figure V-9b



CASE II : Assume that A's isolated public good output is less than B's production at isolation ($x_0^A < x_0^B$), but that the slope of country A's reaction curve is also less than country B's slope ($\alpha < \beta$).

The steeper reaction curve of A implies a preference function biased toward the public good, relative to B's preference function. The equilibrium output is in this case indeterminate, i.e., x_E^A may be greater than, equal to, or less than x_E^B .

Equation 8 indicates that if the difference of pre-spillover production is smaller than the difference of A's reaction to B's output and B's reaction to A's output, then the country producing a smaller amount of the public good before the reaction process, bears in equilibrium a smaller proportion of the public good's costs. This is the cost distribution that Olson predicts in his theory (Figure V-10a). However, Olson's prediction does not hold when equations 6 and 7 characterize the two-country model. Indeed, it is possible that x_0^A may be smaller than x_0^B , but in equilibrium country A may produce more of the public good than country B (Figure V-10b).

A corner solution may still be arrived at when x_0^B equals or is greater than the public good spillover necessary to ensure a zero public good production for A. Equilibrium output will then be entirely produced by B and country A will have again a free ride (Figure V-10c).

Figure V-10 Public Good Equilibrium ($x_0^A < x_0^B, \alpha < \beta$)

Figure V-10a

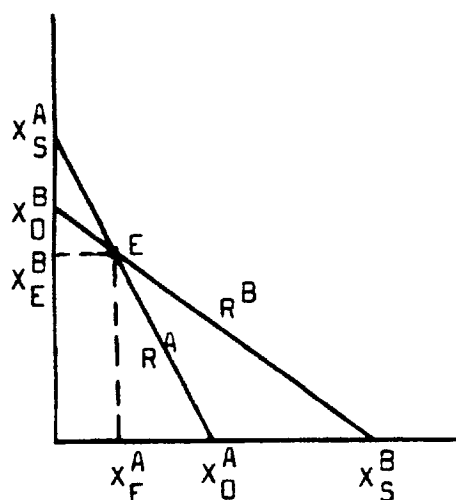


Figure V-10b

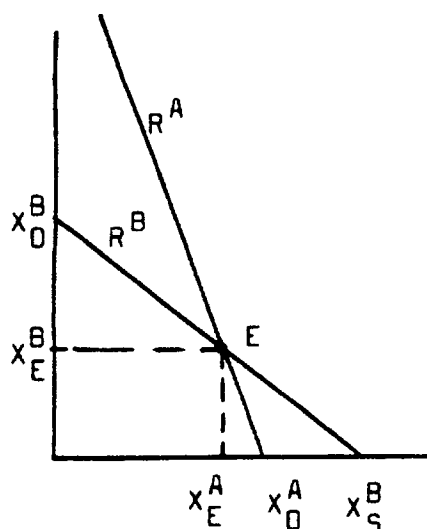
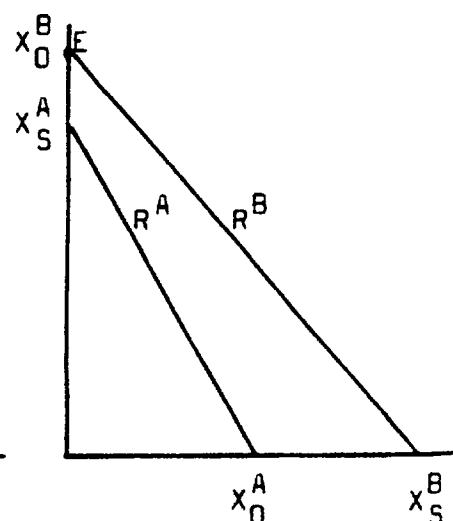


Figure V-10c



CASE III : Assume that A's isolated public good output is greater than B's production at isolation ($x_0^A > x_0^B$), and the slope of A's reaction curve is greater than country B's slope ($\alpha > \beta$). The flatter reaction curve of country A implies a preference function biased toward the private good relative to B's preference function. Also in this case the equilibrium output is determinate, i.e., x_E^A may be greater than, equal to, or less than x_E^B . The ambiguity can be resolved by referring to equations 6 to 8.

Equation 8 indicates that if the difference of pre-spillover production is smaller than the difference of A's reaction to B's output and B's reaction to A's output, then the country producing a larger amount of public good before the reaction process bears in equilibrium a smaller production of the public good's cost. It is thus possible that x_0^A may be greater than x_0^B , but in equilibrium, country A may produce less of the public good than country B (Figure V-11a). Briefly, if the two-country model is characterized by the conditions set out in equations 6 and 8, Olson's prediction of the cost distribution does not hold. Only the conditions set out in equation 7 lead to a confirmation of Olson's thesis (Figure V-11b).

A corner solution will appear in this third case when A's isolated public good output is equal to or larger than the spillover necessary to ensure a zero production for B. At equilibrium, A produces the same amount of public good that it produces at isolation, while B does not produce anything of the good ($x_0^A \geq x_S^B$) (Figure V-11c).

Figure V-11 Public Good Equilibrium ($x_0^A > x_0^B, \alpha > \beta$)

Figure V-11a

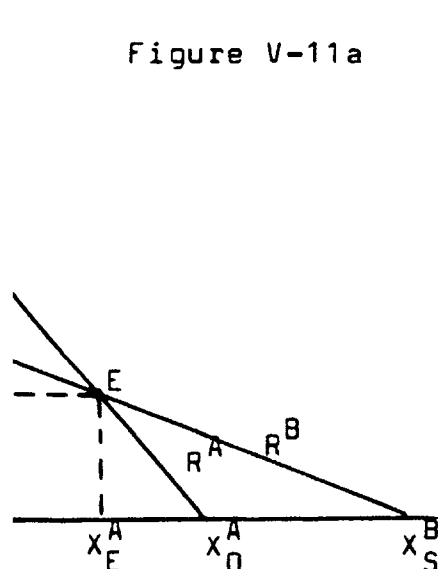


Figure V-11b

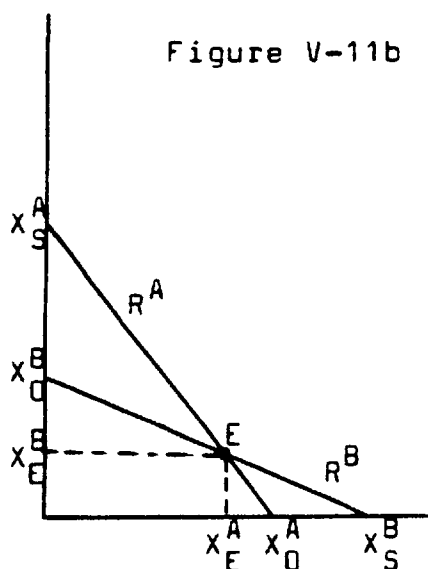
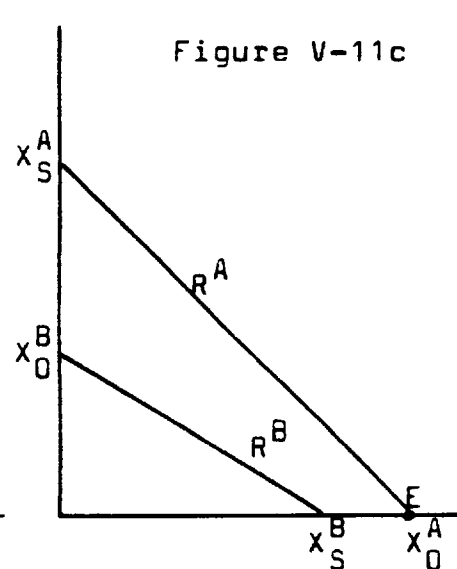


Figure V-11c



CASE IV : Assume A's isolated public good production is larger than B's isolated output ($x_0^A > x_0^B$) and the slope of A's reaction curve is less than the slope of B's reaction curve ($\alpha < \beta$).

It is obvious from equation 5 that $x_E^A > x_E^B$, i.e., the independent adjustment process will result in an equilibrium where country A will always produce more than country B. In other words, the country with the larger public good output before the reaction process and the higher preference for the public good relative to the private good, will always produce more than the country with the smaller pre-spillover production and lower preference for the public good (Figure V-12a).

A corner solution will appear when country A's pre-spillover output is equal to or larger than the amount of public good necessary to ensure a zero production for country B ($x_0^A \geq x_S^B$). After the reaction process, country A will produce all of the public good, while B has a free ride (Figure V-12b).

Figure V-12 Public Good Equilibrium ($x_0^A > x_0^B, \alpha < \beta$)

Figure V-12a

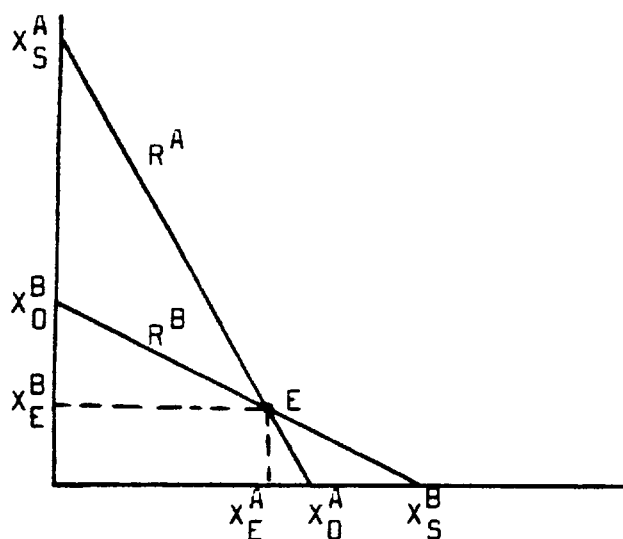
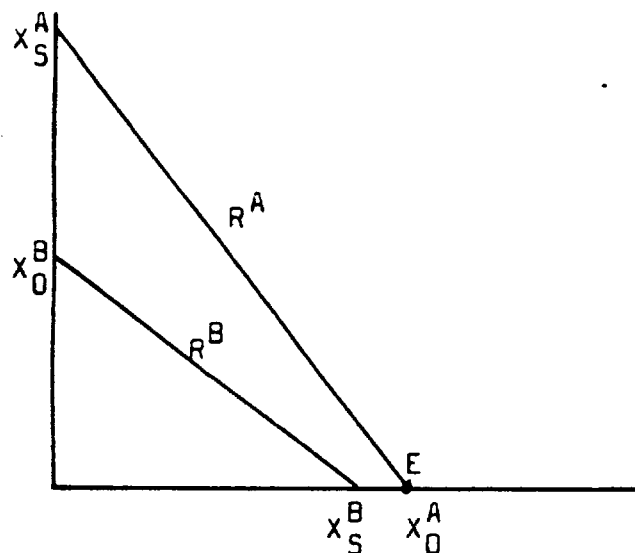


Figure V-12b



All the possible outcomes for cases I to IV are summarized in Table V-1 (1). It is apparent that knowledge of size alone is insufficient to analyze cost distribution of a public good. One country may have a larger factor endowment than another, but this does not mean that the former necessarily has a larger public good production than the latter.

Olson's theory of exploitation in public good situations says that larger countries are exploited by small ones with regard to the cost-benefit ratio of public goods. Our elaboration of Olson's public good model indicates that income effects may modify the public good production predicted by Olson's thesis. Important, therefore, is to know a country's preference function, i.e., how much a country will increase its consumption of the public good with a given public good spillover effect. Knowledge of a preference function is available within the context of a constraint, i.e., the amount of spillover necessary to ensure a zero public good production. Furthermore, a reaction curve is used to illustrate the equilibrium output of the public good. Derivation of a reaction curve, however, is possible only when preferences are known. This highlights the importance of bringing preferences into a public good analysis.

(1) Table V-1 only deals with equilibrium conditions of 'normal' public goods (i.e., $0 < \alpha$, $\beta < 1$). For the sake of theoretical completeness we mention that the analysis can easily be extended to the conclusion of the categories of superior and inferior goods. The different configurations which might result from it do not, however, modify the general conclusions of the model.

Table V-1 Equilibrium Conditions for Public Good Output

Equilibrium conditions for public good output	Equilibrium Output	Range of equilibrium possibilities	Corner-solution
<p>CASE I</p> $x_0^A < x_0^B$ $\alpha > \beta$	$x_E^A < x_E^B$	$0 \leq x_E^A < x_0^A$ $0 < x_E^B \leq x_0^B$	<p>if $x_0^B \geq x_0^A$</p> <p>then</p> $x_E^B = x_0^B$ $x_E^A = 0$
<p>CASE II</p> $x_0^A < x_0^B$ $\alpha < \beta$	$x_E^A \geq x_E^B$	$0 \leq x_E^A < x_0^A$ $0 < x_E^B \leq x_0^B$	<p>if $x_0^B \geq x_0^A$</p> <p>then</p> $x_E^B = x_0^B$ $x_E^A = 0$
<p>CASE III</p> $x_0^A > x_0^B$ $\alpha > \beta$	$x_E^A \geq x_E^B$	$0 < x_E^A \leq x_0^A$ $0 \leq x_E^B < x_0^B$	<p>if $x_0^A \geq x_0^B$</p> <p>then</p> $x_E^A = x_0^A$ $x_E^B = 0$
<p>CASE IV</p> $x_0^A > x_0^B$ $\alpha < \beta$	$x_E^A > x_E^B$	$0 < x_E^A \leq x_0^A$ $0 \leq x_E^B < x_0^B$	<p>if $x_0^A \geq x_0^B$</p> <p>then</p> $x_E^A = x_0^A$ $x_E^B = 0$

Conclusion

The above analysis has demonstrated that a small country's cost-benefit ratio for a public good can be higher than that of a large country (cfr. Cases II and III). This implies that different states place correspondingly different evaluations on the consumed amount of the public good that is not domestically produced. A state's evaluation of the public good spillover is reflected in the slope of its reaction curve. If the slope of the reaction curve approaches zero, then the country highly values the marginal increases of public good consumption ; if the slope approaches one, then the country is not much interested in additional consumption of the good.

The intersection of the reaction curve will determine the equilibrium public good output of both countries. The equilibrium conditions of public good output, i.e., the isolation output and the slope of the reaction curve, will determine how much each country will actually provide of the good. However, the two reaction curves need not always intersect. In this case the equilibrium output will be the same as the isolation output of the country with the largest isolation output before the independent adjustment process. Then the general conclusion of Table V-1 was that the rationale for international cooperation with respect to the provision of a single public good stems directly from the relative importance of the public good's marginal increases.

The analysis implicitly assumes the existence of several public goods, because this may reveal a variety of preferences with regard to the public goods. And it is this variety of preferences which may engender international cooperation for an increased supply of public goods. A multi-purposed organization in which members have differing interests creates an environment facilitating the recognition of varied preferences and therefore room for cooperation between countries as to the supply for public goods. Henceforth, an organization should be structured in a way that disadvantages of non-cooperation and changes for mutually advantageous exchange and economic cooperation are readily apparent to members. In short, we

discussed equilibrium public good conditions that may bring forth international cooperation between large and small countries as to public good supplies. The results demonstrated that with the introduction of preferences, Olson's exploitation hypothesis with regard to the cost-benefit ratio of public goods, needs to be qualified (1).

(1) Our analysis concentrated on the cost-sharing arrangements with regard to the public good production. However, exploitation of one country by another should perhaps not be measured only by cost-sharing, but also by the gains of living in an international environment (for instance, comparing production and consumption at open equilibrium with the production and consumption in isolation for the two countries).

B. An International Cooperation Model : A Re-statement of Ruggie's Model

Introduction

In the elaboration of Olson's public good model we were primarily concerned with an analysis of the equilibrium conditions of public good output for countries of different size. It was meant to offer a qualification of Olson's conclusion that large countries are exploited by small ones with regard to the cost-benefit ratio of public goods. By introducing preferences into the analysis, it was argued that mutually advantageous exchange may lead to cooperation between large and small countries about public good supplies.

Here we introduce an international cooperation model, very much inspired by Ruggie, to add an important qualifying perspective to the study of the actual behaviour of states towards international cooperation (1). Whereas Olson's model analyzes the behaviour of states in the presence of a public good, the international cooperation model puts its emphasis on the choice between national organizational and international organizational arrangements that countries face in the pursuit of their objectives. What is a state's rationale, given certain possibilities and constraints, to select from among alternative modes of achieving objectives, both national and international?

(1) We should be aware that Ruggie is a political scientist who starts off his analysis from an International Relations' perspective. We refer to Ruggie, J.G., Collective Goods and Future International Collaboration, American Political Science Review, Vol. 66, 1972-2, p. 874-892 ; and Ruggie, J.G., International Responses to technology : Concepts of Trends, International Organization, Vol. 29-3, 1975, p. 557-583.

1. Ruggie's Model of International Collaboration

Very briefly we explicate the main assumptions upon which Ruggie's analysis is based, i.e., the structure of the contemporary interstate system and the states as actors within that system. They both fall completely into the framework of the Rational Actor Model we explained in Chapter I .

The contemporary interstate system is viewed as "a partially modified Westphalia system : still essentially decentralized, and based upon the will of states, but with each state willing to accept and to engage in some form and some extent of international organization (1)".

States are viewed "as knowing what it is they will, and of being able to order the various things they will in terms of priority. Moreover, I view them as preferring to accomplish more of an objective rather than less, and of wishing to do so with the least necessary expenditures of limited resources. Finally, ... I view states as preferring to limit their dependence upon others to the least necessary level above that assumed for all states (2)". In short, states are seen as rational actors. It is thus obvious that both assumptions fit into the Rational Actor Model. We may now introduce Ruggie's general model.

The basic model imagines a world consisting of two identical states A and B, having identical preferences and resources ; state A being confronted with the choice of what combination of national and international arrangements it needs to perform a given task ; constant returns to scale ; and, finally, no direct interaction between A and B.

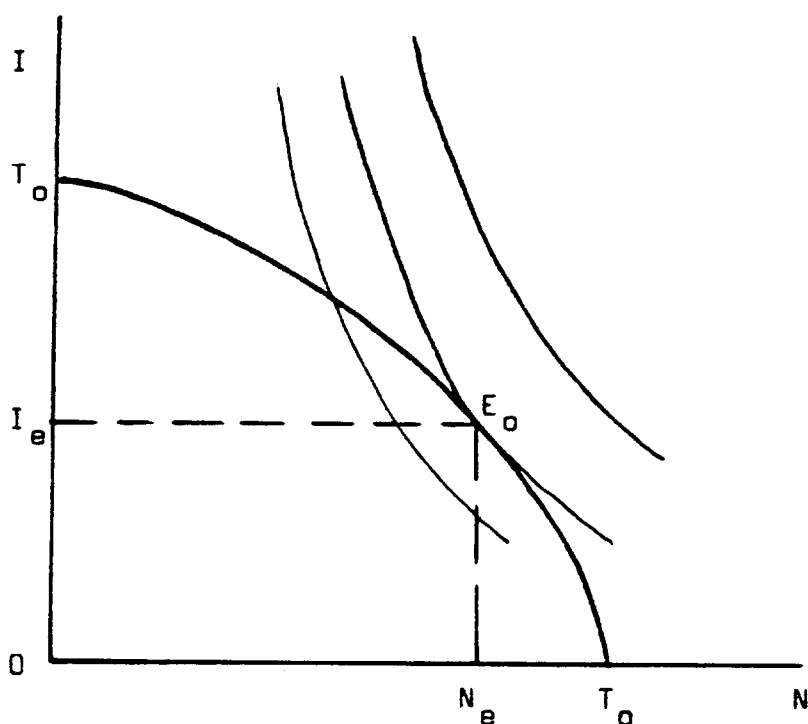
What a state will try to accomplish through international arrangements - defined by Ruggie as 'the propensity for international organization' - is determined by an interplay between the need to become dependent upon others for the performance of specific

(1) Ruggie, J.G., Collective Goods and Future International Collaboration, American Political Science Review, Vol. 66, 1972-2, p. 877.

(2) Ibid., op.cit., p. 878.

tasks, and the general desire to keep such dependence to the minimum level necessary. Ruggie constructed a point demonstrating that relationship. This is diagrammatically shown in Figure V-13.

Figure V-13 Ruggie's Model



Transformation curve $T_o T_o$ determines the optimum allocation of country A's resources between national and international arrangements. This production possibility curve represents the locus of feasible and efficient combinations of national and international 'task performance' that A can secure, given its level of national resources. The slope of the curve at any point indicates the marginal rate of transformation of national for international arrangements (or vice versa), i.e., how much more international performance can be obtained by transferring resources from national arrangements.

In the same figure Ruggie has plotted a set of indifference curves. They indicate the preferences of a state between cooperation with other states of the performance by any one particular task and the desire to maintain limited dependence upon others. The slope of the curve at any point indicates the marginal rate of substitution of one good for the other one, i.e., the extra benefit gained by foregoing one extra unit of 'national task performance' for one extra unit of international arrangement.

What country A will seek to do is then defined by equilibrium point E_0 , point of tangency between the transformation curve T_0T_0 and the highest possible indifference curve. At E_0 , $MRS = MRT$. The coordinates of E_0 will mark the combination of organizational arrangements that country A will select, i.e., I_e and N_e . The interplay between the need to become dependent upon the others for the performance of particular tasks, and the general preference to keep such dependencies limited, is graphically expressed by this equilibrium point of the general model.

Ruggie then relaxes a number of the initial assumptions of the model by introducing inequality of national resources and the factor 'time' into the analysis (1). The impact of these varying conditions upon the equilibrium point demonstrates that : 1) "There exists an inverse relationship between the ratio of i/n and the total level of national resources" (2) (i being 'the task performance through international organization' ; and n 'the task performance through national organization') ; 2) "Over time, as national capabilities increase and become sufficient to perform a given task, the propensity for international organization decreases" (3).

To illustrate the postulated changes in the equilibrium point of the basic model that the above propositions indicate, Ruggie has examined the behaviour of industrialized countries in two areas, i.e., the funding of development assistance and the financing of

(1) Ibid., op.cit., p. 880-882.

(2) Ibid., op.cit., p. 881.

(3) Ibid., op.cit., p. 881.

research and development. Actual behavioural tendencies in both areas suggested a good approximation of the hypotheses.

2. Re-statement of the International Cooperation Model

So far I have presented the basic dynamics of Ruggie's model of international cooperation. His hypotheses are very useful and interesting to deal with, certainly if one is interested in analyzing the behaviour of states towards international cooperation, whatever output these international arrangements may bring forth. Because I felt ill at ease with Ruggie's confusing terminology of the model, in the further course of this part I will try to re-state the arguments of the international cooperation model, based on a more explicitly economic reasoning. There may be different ways to interpret Ruggie's model of international cooperation. Here we reason in a production scheme. Given a fixed amount of resources, a state faces the problem of which kind of combination of two qualitatively different goods, i.e., national arrangements and international arrangements, it will choose to pursue its objective.

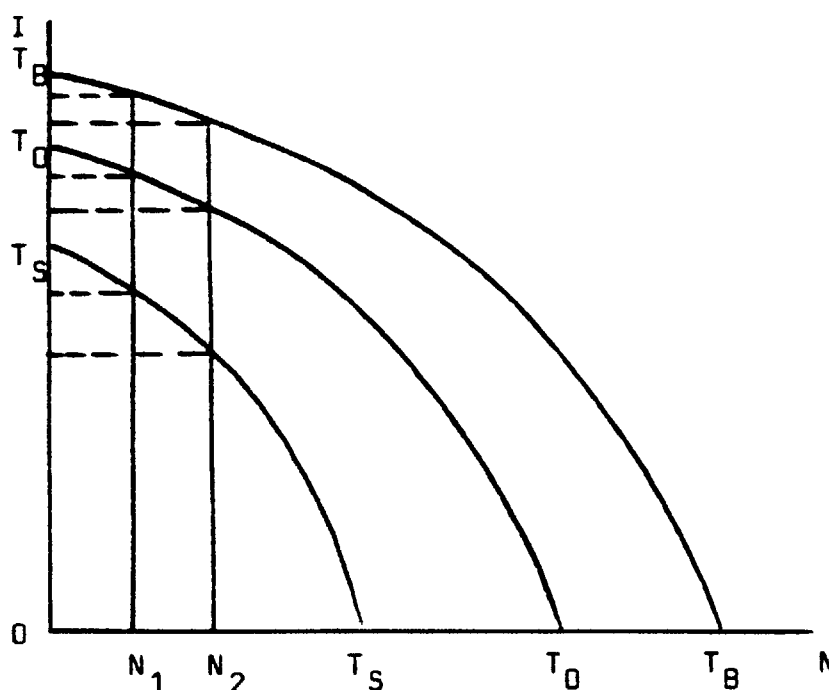
We draw on Ruggie's basic figure (Figure V-13) for our own explanation. The transformation curve T_0T_0 indicates the feasible and efficient combinations of national and international arrangements a country can secure, given its fixed total level of resources. We assume an 'increasing opportunity cost', so that the transformation curve has a concave shape. In this output scheme different community indifference curves are drawn. They rank the preferences for a total level of utility derived from different combinations of the two goods. The steep slope of these indifference curves indicate the relative high preference for the national arrangements, i.e., before a country would be willing to give up one unit of N, the payment in terms of units of I would need to be quite large. The country will now choose the best possible combination of the two goods, given its total level of resources and preferences. This is

indicated at equilibrium point E_0 . A corner solution exists when the equilibrium is situated on the I-intersect, i.e., given the level of resources, a country does not produce any national arrangements to achieve an objective and does spend all of its resources in international arrangements. This possibility may be viewed as a real case for countries with very small resource bases.

In any case, it may well be impossible to operationalize such an equilibrium point in an empirical setting. However, it is not purpose to do so. What is important here is the emphasis on the choice a country has in achieving an objective by selecting a particular combination of national and international arrangements. Having presented the basic model, we now introduce some additional conditions.

Instead of assuming identical actors, we recognize - as Ruggie has done - the possibility of different states with different levels of national resources. This inequality of resources is related to the choice a country has between national and international arrangements to achieve its objective. Figure V-14 repeats the general model for country A : a transformation curve T_0T_0 , a set of indifference curves and the point of equilibrium E_0 .

Figure V-14 Combination of National and International Arrangements

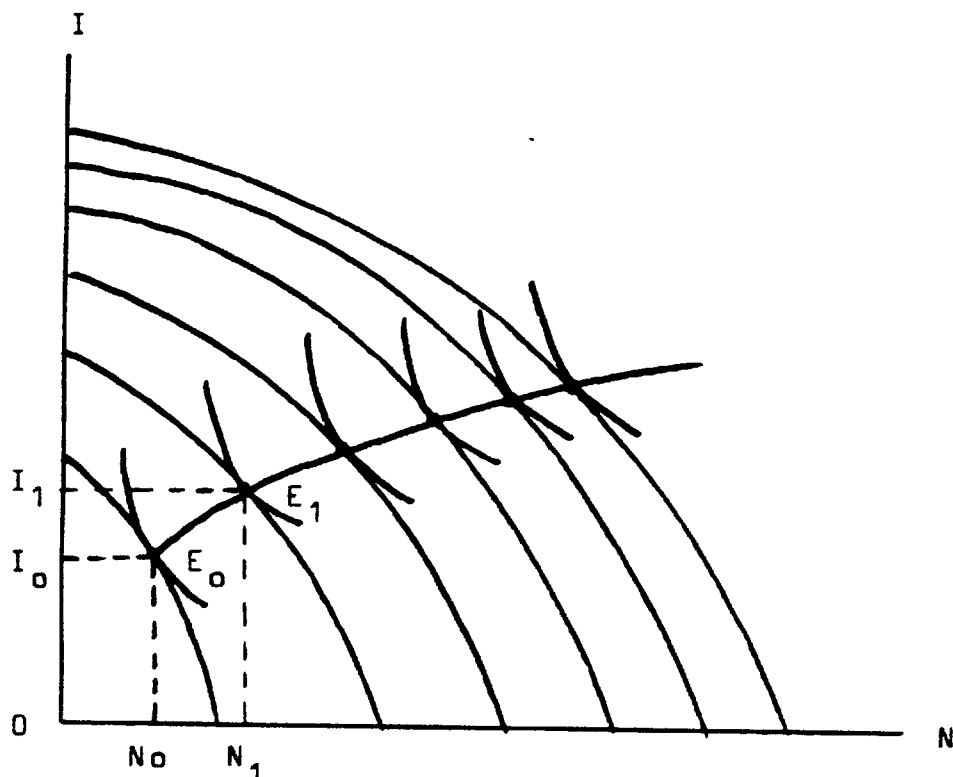


If A's level of resources were, however, actually lower than the amount indicated by $T_o T_o$, the overall level of possibilities would decrease and the transformation curve would shift inward towards the origin ($T_o T_o$). Similarly, were A's level of resources to be higher, the $T_o T_o$ curve would shift outward, away from the origin ($T_B T_B$).

The transformation curves of countries with different levels of resources are drawn in the sense that the rate of transformation between the production of international arrangements and the production of national arrangements decreases as the size increases. As to a higher output of national arrangements it is assumed that the higher the resource base of a country the less resources need to be given up from the production of the international arrangements ; or the lower the resource base of a country the more resources need to be given up from the production of the international arrangements. This situation is clearly shown in Figure V-14 when countries with different levels of national resources move from N_1 to N_2 . In other words, for countries with small resource bases returns to scale are very important in the production of national arrangements, while they are rather negligible in the production of international arrangements.

In Figure V-15 different transformation curves are plotted for countries with different resource bases. Both national and international arrangements can be seen to increase as the level of national resources increases, and decreases as resources decrease, but not by like amounts. The consecutive points of equilibria indicate different combinations of organizational arrangements that countries will select. In practice, it means that the ratio of international arrangements over national arrangements decreases the higher the total level of national resources, and increases the lower the level of resources. There seems to be an inverse relationship between the ratio of international over national arrangements and the total level of national resources.

Figure V-15 The Impact of Inequality of National Resources



The line linking the different equilibrium points demonstrates the impact of inequality of national resources on the combination of goods N and I the countries will select. The shape of this line is determined by the returns to scale in the production of the two goods. It is probably the case that countries with very small resource bases will spend all their available resources on the output of international arrangements to attain a specific objective. In this case the line linking the different equilibrium points will start off from the I -intercept.

The operationalization of these hypotheses in an empirical setting brings us to two related hypotheses : 1) there exists an inverse relationship between the ratio I/N and the total level of national resources ; and 2) there exists an inverse relationship between the proportion of national resources devoted to a specific objective and the ratio of I/N . These hypotheses will be taken and tested in the analysis of the Foreign Aid Sector which will be dealt with in the last chapter.

Equally interesting is another implication which can also be derived from Figure V-15, i.e., the impact of the time factor on the combination of national and international arrangements. This impact of changing levels of national resources over time for one and the same country is demonstrated in this figure. Instead of representing different countries with different resource bases at one moment, the equilibrium points now indicate the development of one country's choice in the production of the two organizational arrangements when its resource base is changing over time. As national resources rise, the combination of N and I changes. The production of both arrangements increases: I increases, but at ever smaller increments, and eventually levels off; N on the other hand, continues to rise as long as resources rise, and as long as the specific objective is to be achieved. In short, this indicates that as the national resource base increases over time, a country will increasingly produce national arrangements to achieve its specific objective. To operationalize this implication in an empirical setting, it is stated that over time, as national resources increase and become sufficient to achieve a given objective, the relationship of international over national arrangements will decrease.

Conclusion

Ruggie's international cooperation model that we re-stated in a more economic reasoning adds another element to the analysis of the behaviour of states towards international cooperation. Olson's rather straightforward public good model does not take much interest in the analysis of alternate modes of pursuing one's objectives. He only analyzes the production behaviour of countries in the presence of a public good in international relations. Ruggie's international cooperation model is situated in a joint production framework. He considers the choice of a combination of two goods in the pursuit of an objective. In addition, while Olson's arguments are based on the consequences of the characteristics of a public good, Ruggie's model is based on the impact of the returns to scale-argument in the production of national and international arrangements.

Resuming, in the study of the actual behaviour of states towards international collaborative arrangements, both complementing perspectives should be taken into consideration, i.e., the output of public goods for countries of different size and with different preferences, and the choice between national and international arrangements that countries with different resource bases are facing in the pursuit of their objectives. It also implies that we arrive at a rather complex set of propositions with regard to the behaviour of small states towards international arrangements. On the one hand, Olson's public good model is related to the 'exploitation-hypothesis' of the big by the small in the production of a public good, qualified, however, by the introduction of differential preferences of countries towards the consumption of a public good. Ruggie's international cooperation model, on the other hand, is related to the hypothesis that countries with smaller resource bases have important returns to scale in the production of national arrangements, i.e., the smaller the level of national resources, the more a country will look for international arrangements in the pursuit of its objectives.

In the following empirical analysis of the Foreign Aid Sector, we will profit by the combined impact of these two perspectives of international cooperation to assess the performance of the objective of development assistance and its financing through multilateral and bilateral aid channels for a number of industrialized countries.

CHAPTER VI THE PHENOMENON OF INTERNATIONAL DEVELOPMENT AID

Introduction

The time has come to turn our attention to the more empirical part of our study. International development aid is taken as that area of international cooperation in which the assumptions and tools of the Rational Actor Approach will be tested (1). This method of analysis does not imply a value judgement about the reasons, the amounts and channels of foreign aid. It only aims at an analysis and/or tentative explanation of the foreign aid behaviour of some donor countries according to some assumptions and analytical tools.

In this chapter we present a descriptive analysis of the phenomenon of international development aid. First, we describe the history of development aid since World War II. Second, we present the general characteristics of the aid performance of a specific donor group.

International development aid has become known under the form of a political notion. Like most political notions it is subject to varying interpretations. In many governmental aid programs development aid has got intertwined with military aid, political support, export promotion or cultural propaganda. Often, such varied private activities as missionary work, industrial investment

(1) The analysis of aid now seems to have achieved the status of a distinct field of study and, consequently, there exists a large number of textbooks. For some particularly useful ones, see Bhagwati, J. and Eckaus, R.S. (eds.), Foreign Aid, Harmondsworth, England: Penguin, 1970 ; Hunter, R.E. and Rielly, J.E. (eds.), Development Today, New York: Praeger Publishers, 1972 ; Little, I.M. and Clifford, J.M., International Aid, London: Allen and Unwin, 1965 ; Mikesell, R.F., Economics of Foreign Aid, London: Weidenfeld and Nicholson, 1968 ; Pincus, J., Economic Aid and International Cost Sharing, Baltimore: The Johns Hopkins University Press, 1965 ; Wall, D., The Charity of Nations, New York: Basic Books, 1973 ; White, J., The Politics of Foreign Aid, London: Bodley Head, 1974 ; Zeylstra, W.G., Aid of Development : The Relevance of Development Aid to Problems of Developing Countries, Leiden: A.W. Sijthof, 1975.

and lending at commercial rates of interests are being referred to as 'aid'. In short, it is an ambiguous political notion.

Moreover, statements on foreign aid policy are often not sufficiently precise to meet the requirements of the social scientists for a rigorous analysis of the means for achieving well-defined ends. Motives, targets, and policy instruments tend to become confused in the rhetoric of public policy statements. Hence, it is not a very easy task to aim at generalizing conclusions and theoretical analyses in a complex and fluid field such as Foreign Aid. A mere glance in the Foreign Aid field will quickly confirm this tendency. One may note several distinct perspectives.

→ If one adopts the perspective of the donor countries, foreign aid may serve national objectives, ranging from direct economic or security aims to the promotion of world peace and stability. Although the U.S. foreign aid doctrine has undergone several shifts since World War II, basically aid has been seen as a means of carrying out national foreign policy objectives. For the European colonial powers, aid has been closely associated with national policy objectives relating to former dependencies with which they continue to have special economic and political ties. Other donors concentrate more on a purely economic rationale for their aid disbursements, while still others put more emphasis on the humanitarian motive of foreign aid. → The multiplicity of these goals and the changes in their importance over the last decades have affected the aid performance of the donor countries in volume as well as in distribution of the disbursements. The diversity of goals makes the use of theoretical models to analyze the behaviour donor countries somewhat restrictive. Any scientific undertaking in the foreign aid domain ought to be aware of the limitations of this analysis.

Foreign aid doctrine in the recipient countries is usually based on an entirely different philosophy of aid from that held by the donors. They are frequently resentful or suspicious of the donor countries' national objectives that are being served by aid. Recipient countries tend to regard aid as an obligation of rich countries, and a right of the recipients. Therefore, one can

understand that most recipient countries prefer that aid be provided by United Nations' agencies, largely controlled by developing countries but financed by the developed countries.

Goran Ohlin has suggested a 'United Nations Approach' towards foreign aid. It regards aid as a moral responsibility on the part of the advanced countries and an essential element in progress towards international peace and stability (1). None of the various aid doctrines are mutually exclusive and elements of the United Nations doctrine can be found in varying degrees among the national objectives of aid expressed by donor countries. In the further course of the study we have chosen to limit ourselves to the analysis of development assistance by donor countries.

(1) Ohlin, G., Foreign Aid Policies Reconsidered, Paris: OECD, 1966.

A. The History of the Phenomenon of International Development Aid

In the history of the phenomenon of international development aid, we will describe the impact of the changing characteristics of the international system on the actual aid performance of donor countries. It will become clear that development aid since World War II has experienced distinctive periods of focus, content and form of aid. These changing elements have often found an expression in the actual aid policies of donor countries. This will be shown in the following historical section (1).

1. Idealism of the Immediate Postwar Period

The immediate postwar period was marked by a strong idealism. This idealism was not so much a response to external impulses, but was rather inspired by a growing awareness of responsibility for the state of the world at large after the terrible experience of the Second World War. The conferences of Breton Woods and San Francisco were expressions of this idealism.

Two new financial institutions were created, i.e., the International Bank for Reconstruction and Development (IBRD) and the International Monetary Fund (IMF). They were organized to cope with tasks such as the reconstruction of Europe, the restoration of international trade, and the development of backward areas. At the founding of the United Nations in San Francisco in 1945 the spirit of the world was reflected by the wording of the Charter : "To achieve international cooperation in solving international problems of an economic, social, cultural or humanitarian character" (2); and this was adopted as a common purpose.

Very soon, however, it became evident that the reconstruction in Europe and the development of backward areas were tasks of alto-

(1) For part of the evolution of 'International Development Aid' we rely on Zeylstra, W.G., Aid or Development, The Relevance of Development Aid to problems of Developing Countries, Leiden: A.W. Sijthoff, 1975, p. 9-103.

(2) Ibid., op.cit., p. 26.

gether different dimensions from those foreseen in Breton Woods, and would require efforts far beyond the possibilities entrusted to IBRD and IMF. Moreover, the spirit of solidarity among the allies did not long survive the end of hostilities. It certainly weakened the prospects of a collective approach to world problems.

The practical point of reference for the assistance envisaged in Breton Woods has been the economic aid the U.S. had given to allies from 1941 under the Lend-Lease arrangements. This kind of assistance had not been new. International aid had been known as an instrument for obtaining short-term political results in the national interest. Also during the First World War the U.S. had lent large sums to its European allies, to be refunded after the war. The Breton Woods conference introduced the idea of foreign aid, not exclusively motivated by the specific national interests of the donor nor given in expectation of rapid results. With a view to these distinctions the Americans had insisted that the operation of foreign aid should be a matter for international cooperation, though realizing that initially they themselves would have to carry the main burden.

Coming out of the war as the only participating country with its economic potential undamaged and even considerably increased, the U.S. was torn between interest in seeing its European allies recover from the war and reluctance to accept long-term engagements for this purpose. For this reason, the U.S. policy was directed to consolidating the multilateral aid agencies within the United Nations' framework as a permanent form of mutual cooperation.

This American strategy for a multilateral drive in development assistance, however, did not work very successfully. The urgent demands for aid in Europe left no room for development assistance to backward areas. Because of the heavy dependence of the multilateral aid agencies on American distributions, the non-European applicants started to accuse the U.S. of discriminating against them. Under the pressure of these criticisms the American government increasingly resorted to bilateral assistance. Thus, circumstances forced the U.S. gradually to relinquish the axiom that solving international problems of an economic and social character should be left to international organizations.

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2. The Truman Doctrine : Content and Effects

The swift change of U.S. conception of development assistance was backed by an ideology, professing the U.S. to be a model to all other nations and 'the American way of life' the key to solving social problems. This identification of the affairs of the world at large with those of the U.S. explained why American bilateral aid programs, although still motivated by national self-interest, also started to be represented as altruistic and directed towards the benefits of the receiving countries. However, this combined impact of a humanitarian and a foreign policy view of aid allocation proved to be a very short-lived illusion.

The Greek-Turkish conflict in 1947 forced the U.S. to adopt a new policy which was formally put forward in the Truman Doctrine. Henceforth, bilateral economic assistance would be accepted in the U.S. as a form of national self-protection. The U.S., in effect, assumed a position of world leadership in which it identified its own national interest, most broadly defined, with that of other countries in the free world (1). This assumption of identity of interest formed the core of its aid policy.

The core of the Truman Doctrine was that the new American policy, i.e., "to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressured ... (and to) assist free peoples to work out their own destinies in their own way" would be pursued "primarily through economic and financial aid which is essential to economic stability and orderly political processes" (2).

(1) A survey of American foreign aid since 1941, published by the Brookings Institution defined foreign assistance as "the use of public funds to finance the transfer of goods and services abroad as a means of obtaining stated objectives of American foreign policy". Those objectives were "to strengthen countries making common cause with the United States in resisting aggression; and to strive for the establishment throughout the world of the conditions of stability and progress that are essential to the security and well-being of the United States", in Brown, W.A. Jr. and Opie, R., American Foreign Assistance, Washington D.C.: The Brookings Institution, 1953.

(2) Zeylstra, W.G., op.cit., p. 33.

The Truman Doctrine has acquired special significance as the preface to the Marshall Plan, the most extensive program of bilateral aid that history has yet seen. The 'Marshall' aid included not only material and financial aid, but besides, technical assistance, transfer of know-how, and the financing of projects. When the aid became a reality, the recipient countries were forced to incorporate their policies into the Organization of European Economic Cooperation.

Whatever the merits of the results produced by the 'Marshall' aid, they bore little relation to its original objective as stated in the preamble of the Economic Cooperation Act : "to promote world peace and the general welfare, national interest, and foreign policy of the U.S. through economic, financial and other measures necessary to the maintenance of conditions abroad in which free institutions may survive in consistence with the maintenance of the strength and stability of the United States" (1). Once the program had been set in motion, it started achieving a rationale of its own, stressing the national security objective of foreign aid.

The communist invasion of South Korea on June 25, 1950, suddenly placed the problem in a completely different light. From then on, the remaining part of the program was directed towards more than one objective : not only should production in Western Europe be sufficient to guarantee a certain standard of prosperity, but also allow the region's rearmament. The Cold War was at its highest point. It constituted the core of the American aid policy.

This situation also brought a new orientation of the American bilateral aid policy into existence, i.e., bilateral economic aid was extended to regions outside Europe. Truman's Point Four Program can be regarded as the first break-through of development cooperation in the direction of a world wide vision (2). In practice,

(1) Ibid., op.cit., p. 31.

(2) For a more extensive discussion of Truman's Point Four Program we refer to Brown, W.A. Jr. and Opie, R., American Foreign Assistance, Washington D.C.: The Brookings Institution, 1953 ; and Banfield, E.C., American Foreign Aid Doctrines, Washington D.C.: American Enterprise Institute for Public Policy Research, 1963.

however, there was no question of rejecting American self-interest as the main criterion for the distribution of aid. Simultaneously, a more liberal funding was provided to the programs of the United Nations.

Point Four has not inspired other countries immediately to follow the American example. Up to the end of the 1950s, aid to poor, independent states by industrialized countries outside the U.S. was pretty well restricted to the amounts subscribed to the United Nations agencies and programs. From about 1960, however, these countries increased their aid effort, mainly by the way of bilateral assistance to their former colonies.

3. The First Development Decade

a. The Decolonization Process

It can be argued that 1960 was a milestone in the history of development aid. Around this year a change in the patterns of assistance can be discerned. This shift in behaviour of a number of countries was linked to the political transformation of the underdeveloped world resulting from the decolonization process (1).

It is understandable that this new situation led to an increase of existing American programs. Decolonization opened large areas to U.S. influence which had formerly been exclusively the political responsibility of the colonial powers. Moreover, the former European colonial powers France, United Kingdom, Portugal and Belgium emerged as important contributors of bilateral aid. This trend clearly points towards a certain relationship between assistance and decolonization. In other words, the historical relationships with the principal recipients were an important motivation of development assistance for the former colonial powers.

(1) A good discussion about the decolonization period can be found in Little, I.M. and Clifford, J.M., International Aid, London: Allen and Unwin, 1965, p. 30-45.

b. Financial Aid as the Principal Need

The changed atmosphere was responded to with the establishment in 1959 of the International Development Association (IDA) and the United Nations Special Fund (UNSF), but even so the possibilities of distributing aid through the United Nations remained far short of the urging needs of the developing countries. While the rich countries stubbornly resisted efforts further to enlarge U.N. funds for development finance, they increased their bilateral aid. They were prepared to recognize development aid to any country in need of it as a collective duty of all U.N. members, but were not yet convinced of the importance of multilateral aid. The objective "to accelerate progress towards self-sustaining growth of the economy of the individual nations and their social advancement" (1) was expressed by a resolution declaring the Nineteensixties the 'United Nations Development Decade'. It implied that all rich countries should recognize a common responsibility for doing their share to help attain this objective (2).

The propaganda accompanying the introduction of the Development Decade mainly served to win public support for decisions of governments to assist developing countries. The general public was encouraged to regard development aid as a category within public expenditure by which an international moral obligation would be fulfilled. It created a receptive atmosphere for an appeal of development assistance. In practice, however, the aid programs remained very much linked to the pursuit of political aims considered to be of national interest of the donors and proved to be of an increasingly financial character.

(1) XXX, The United Nations Development Decade, New York: United Nations, 1962, p. 7.

(2) In Singer, H.W., International Development Development : Growth and Change, New York: McGraw Hill, 1964, p. 31, the author summarizes very well the course that the events actually took : "A major recent development which could not have been foreseen, has been the spread of public financial aid from developed countries to the underdeveloped countries. The most striking thing about this is not the giving of aid itself but the degree in which giving aid has become a recognized responsibility of the more advanced countries and an institution which they recognize as being in their enlightened self-interest".

This emphasis on the financial aspect of aid suggested that development aid was seen from a mere economic perspective. Particularly since it would be related to the effect of the Marshall Aid, the problems of the developing countries were seen in terms of the standard of living only. It followed that these problems could be identified by observing discrepancies and similarities between data on both groups of countries through comparison. And comparability could only be achieved through quantification. In short, the development economists defined development as a measurable concept. Moreover, the presentation of aid as a predominantly financial affair facilitated publication of comparative information concerning aid efforts of the rich countries and the geographical allocation of assistance.

The view of development aid as primarily a matter of supplying financial flows to developing countries has been embodied in the famous 'one per cent target', adopted by the U.N. General Assembly in 1960, elaborated at the meeting of UNCTAD in Geneva '1964' and endorsed in 1964 by the DAC (1). We refer to the next section for a more detailed statistical analysis of the resource flows of the members of the Development Assistance Committee to the developing countries.

Soon, the initial optimism of the Development Decade showed signs of cooling down. Development financing did not bring about a large-scale take-off in the developing world as the development economists had hoped for. The rich countries introduced the notion of development cooperation, which suggested that development results were as much depending on the efforts of the recipient countries as on the support of the donors. The UNCTAD conferences provided this notion with an institutional basis.

At the end of the Decade a further shift of responsibility towards the developing countries became noticeable. In 1970 the Peterson Report suggested that the U.S. should redesign its policies so that "the developing countries stand at the center of the inter-

(1) A critical review is given in XXX, Partners in Development, Pearson Report, New York: Praeger Publishers, 1969.

national development effort, establishing their own priorities and receiving assistance to the efforts they are making on their own behalf" (1).

c. Preference for Bilateral Aid

Throughout the Development Decade the advanced countries have persisted in giving proof of a clear preference for bilateral development assistance over the intermediary of the various United Nations' and other multilateral channels for its distribution. This indicates that many donor countries attach great value to reserving for themselves the decision for which countries their aid will be intended. It has often resulted in a subordination of development aid policies to the promotion of national interests. But frequently, the receiving countries too prefer assistance to be bilateral; often they assume that a certain donor country is more familiar with their needs than others and than multilateral aid agencies, or is in a better position to supply the assistance they require. It resulted in a heavy dependence of certain developing countries on one or a few bilateral donors. Traditional examples are the degree to which Latin American countries have had to look to the U.S. for aid, the position of France in a number of former French areas, the U.K. relationship with the Commonwealth or the close Belgian ties with Zaïre.

In retrospect, since the First Development Decade began, developing countries have made some progress in their social and economic development. In major part, the economic growth of developing countries has been export-led, a response to the growing world market, in particular, the rapid expansion of the OECD countries. However, some argued that these successes in aggregate economic growth were accompanied by a deterioration in the terms of trade of almost all developing countries. Therefore, one should be very careful in assessing the aid achievement of this period.

(1) Report to the President of the United States from the Task Force on International Development : U.S. Foreign Assistance in the 1970s : A New Approach (Peterson Report), Washington D.C., 1970, p. 3.

4. The Second Development Decade

a. The Changed International Environment of Development Cooperation

A troubled international system made the start of the Second Development Decade quite difficult. The world monetary situation was shaken by the 1971 events and the United States was facing the most serious domestic economic problems that she had experienced since World War II. Moreover, the pervasive and global nature of problems - persistent inflation in the industrial market economies, combined with the precarious global foodgrains situation of the recent years, the explosive increase in oil prices by the OPEC countries and recession - did drastically change the economic environment of the development aid and, consequently, affected the development partnership among developed and developing countries. Oil-importing developing countries suffered major deterioration in their terms of trade, caused by the sharp increase in the cost of oil and the continued rise in prices of other important goods. Recession in the OECD countries compounded the effects of higher import prices by cutting deeply into the export of most developing countries as the terms of trade deteriorated and the volume of aid declined.

A new element in this changed international environment of development cooperation was the emergence of a new group of countries, allocating aid to developing countries. The OPEC countries, exploiting their oil resources as an important economic and political power source in the international system, emerged as important donors of aid to non-oil developing countries. The oil countries make a clear distinction between politically motivated aid - which is likely to be balance of payments aid for likeminded countries - and more strictly development oriented project assistance. In other words, OPEC became a new factor in the area of development cooperation.

b. Global Responses

The changed international environment of development cooperation called for a broadly cooperative international frame of reference. The increasing interest of countries in multilateralization of development assistance can be seen in this perspective. In the first half of the 1970s a number of declarations of principle and important cooperative responses evolved from a series of international meetings. They all expressed a concern for the nature and the prospects of the development cooperation. In the following pages we only indicate the most important ones.

The UNCTAD Conferences in Santiago di Chile and Nairobi gave positive recognition to the principle that developing countries should be more actively represented at trade and monetary negotiations. More stress has been put on the different needs of different countries so that special measures could be introduced for the least developed countries. An important factor in this perspective was the coming to existence of the Group of 77 developing countries. The rich countries, however, became less indulgent to commit themselves to policies which might put additional burdens on their balance of payments.

In 1974 the Sixth Special Session of the General Assembly of the United Nations adopted a new approach to trade and development which found its expression in the 'Declaration on the Establishment of a New International Economic Order'. Particularly important was the launching of the United Nations Emergency Operation to help the poorest countries maintain essential imports. It re-affirmed the special and collective help of the international community to the poorest countries. The developing countries, on the other hand, expressed their interest in a better integration of their trade and investment in the global patterns of trade.

An important global response to the broader aid and trade interests of developing countries has been the replacing of the Yaoundé-style association by the Lomé Convention of 1975, which

constituted a far-reaching attempt to establish a multilateral framework between the European Community and some fifty or so African, Caribbean and Pacific countries (ACP). The convention combined a package of trade, aid and technical measures addressed to the needs of developing countries for more integrated assistance with their development programs. A novel aspect of the Lomé Convention was the establishment of an export revenue stabilization scheme, known as STABEX. This scheme helps to stabilize export incomes for supplies of some eligible products. It further established a fourth European Development Fund with a capital of 3,000 million EUR (1). The Lomé Convention lasts five years. Presently, we are in an interim stage between Lomé I and Lomé II.

Another cooperative global response to the persistent problems the countries were facing was the World Food Conference meeting in Rome during November 1974. It evoked proposals for a comprehensive response to ameliorate world food problems. The Conference adopted principles for a cooperative global approach, objectives to be achieved over the next decade, and the institutional means for attaining them. Actual implementation of the proposals, however, has not been so successful.

The Second General Conference of UNIDO, held in Lima during March 1975, proposed both broad objectives and specific measures to encourage the industrialization of the developing countries and to increase their share in world industrial production to at least 25 % by the end of the century. Important in the Lima Convention is the determination of developing countries to broaden their development in an effort to lessen their economic dependence as primary producers in the global division of labour.

All these conferences indicate that, despite the disruptive events of the early seventies, nations tried to seek common means for dealing with problems of development cooperation. They reaffirmed the principle that the community of nations has a collective responsibility to protect its weakest members. This spirit

(1) A good summary is given by Twitchett, C.C., The European Community and Development Cooperation, International Relations, Vol. VI-1, May 1978, p. 257-271.

of seemingly productive cooperation of the mid-1970s was well summarized in the OECD Ministerial Meeting of May 1975. It stressed the need for "increased participation of the developing countries in the benefits of an improved and expanding world economy and of the progress towards a more balanced and equitable structure of international economic relations" (1). Once again, it can be said that the collective task of development assistance can be considered as an international public good. The problem becomes more complicated, however, if one is analyzing the actual aid performance of different donors to achieve this collective task. Then one may wonder if donor countries have paid more than lip service to this generally accepted task of genuine development assistance.

c. Search for a Coherent Basis of Development Cooperation

The last two decades have been characterized by a continuous search for a more coherent basis of development cooperation among developed and developing countries. The early optimism accompanying the proclamation of the First International Development Strategy in 1960, when development cooperation was focussed on the gap in living standards and average incomes of developed and developing countries, proved unfortunate. The strategy for the Development Decade beginning in 1970 attempted a more comprehensive direction of development policies by seeking to engage countries in a wide range of issues and sectors, and by setting specific targets in order to encourage and measure progress. One important new feature was a better synthesis of social and economic goals. However, in practice, the International Development Strategy failed to gain effective international support, and was ultimately overtaken by dramatic changes in the international environment. The last few years were marked by a changing outlook which has challenged the traditional goals of development and the adequacy of past efforts. It has been clear by now that the rich as well

(1) OECD, Development Cooperation, 1975 Review, p. 27.

as the poor countries have a direct stake in a more effective and coherent pattern of development cooperation.

World opinion has shifted in recent years, placing emphasis on greater equity and special progress as the essential objective of international development. It resulted in a changing outlook for development policies and objectives. Since 1974 the world has entered a transitional international economic order. The perspectives for a new international order are discussed within the framework of the North-South dialogue. There is at the moment a growing concern for a new world order in that industrial countries, suffering from inflation and recession, are finding it more difficult to provide for continued growth and stability without new means of economic cooperation among themselves and with developing countries.

One of the principles which has emerged as a guidepost for the transitional economic order is that of accommodation and mutual gain among relevant partners. Recent events in international trade and finance have demonstrated interests in common among developed and developing countries. The objectives of sustained and stable world economic growth, freer trade, stable commodity markets and security of food and energy supply are in the long term interests of all countries. Proposing 'mutual gain benefits' on the basis of the interrelatedness of the economic interests is now the guideline for development cooperation among developed and developing countries. An innovative approach in this respect is the 'Programme of Concerted Action' adopted by the OECD Ministers in 1978. Overall, however, the North-South dialogue has yielded disappointing results up to now. Also the results of the UNCTAD V Conference proved to be rather disappointing (1). In other words, the end of the second Development Decade did not show much genuine progress in the development cooperation among the many different partners.

(1) Bischoff, S., UNCTAD V, Overzicht en Evaluatie, Internationale Spectator, September 1979, p. 527-537 ; Rothstein, R.L., Global Bargaining, UNCTAD and the Quest for a New International Economic Order, Princeton: Princeton University Press, 1979.

B. General Characteristics of the Aid Performance of the Development Assistance Committee

1. The Development Assistance Committee

After the description of the history of international development aid since World War II, our further attention will now explicitly be turned to the analysis of the aid performance of a specific club of donors, i.e., the Development Assistance Committee (DAC) of the OECD. The DAC has been by far the most active institutional form in the area of development cooperation (1). We briefly indicate the history and task performance of the DAC.

The history of DAC goes back to 1959. Within the framework of the negotiations to restructure the Organization for European Economic Cooperation, it was agreed that a Development Assistance Group (DAG) should be established to act as a forum for the discussion of common problems between the Western countries which supplied aid to developing areas. With the establishment of the OECD, the DAG became the DAC.

DAC's primary real purpose from the U.S. viewpoint was less to coordinate than to raise the total flow of aid and particularly, to increase Europe's share of it. In the London and Tokyo meetings of DAC in March and July 1961, the U.S. attempted to introduce a burden-sharing scheme based on 2 principles : 1) DAC members (which were then the U.S., Canada, France, Germany, Italy, Japan, the Netherlands, Belgium, Portugal, and the U.K.) should agree to contribute one per cent of their combined annual gross national product as aid to underdeveloped countries ; 2) contributions to that total should be made on the basis of a progressive income tax, self-levied by the member governments. In fact, no common aid fund was proposed, but each country was supposed to refer its own aid effort to these criteria. At the July 1961 meeting, the other countries rejected the American proposal, both in respect

(1) See Cunningham, G., The Management of Aid Agencies, London: Croom Helm, 1974, Chapter 3.

to total amount and composition. Countries were not willing to accept constraints on the national budget process that would follow from accepting an international contributions' scheme of that magnitude. In effect, the U.S. proposal was aimed at getting other countries to contribute more money to the task of economic development of developing countries ; other countries were unwilling to commit themselves to any formula that would ensure greater contributions.

As a result of these discussions, the members finally agreed on a mere annual review procedure based on the NATO-model, which would not make specific recommendations on the size of national foreign aid budgets. As a matter of fact, it was an even less coercive review than the NATO-system. The annual DAC reviews referred to no agreed level of aid, but only to the much more general criterion of adequacy of effort.

As to its task performance, the DAC is considered a specialized committee within the OECD, although membership of the two organizations is not identical. Its chairman, a nominee of the American government, is separately appointed and has no other role in the OECD. He is the chief official, handling aid and developing matters. The Committee possesses a regular staff of professionals and carries out a considerable amount of research. Under the Director for Development Assistance there are three divisions - the Economic Development Division, the Aid Review Division and the Financial Policy Division - and a Statistical Unit. The most regular activity of DAC is the annual Aid Review.

This review publication, which now goes under the title 'Development Cooperation : Efforts and Policies of the Members of the Development Assistance Committee' collects and evaluates statistical material concerning new developments and general trends, volume, geographical allocation, distribution between types of aid, terms of aid, aid-tying, guaranteed export credits, private investment and contributions by private organizations. It constitutes the most comprehensive readily available source for statistics and comments on the programs of Western donors. We make abundant use of these resources for the empirical part of our study.

The geographical distribution of aid is published every few years under the title 'Geographical Distribution of Financial Flows to less Developed Countries'. The third main publication, also produced every few years, is the so-called 'Flows Report', whose full title is 'Resources for the Developing World, the Flow of Financial Resources to Less Developed Countries'. This volume contains much detailed material on each donor's program and is therefore useful in assessing the aid performances of the different DAC members

2. Methodology

Resource flows to developing countries remain difficult to measure (1). The most comprehensive figures that are available cover official flows from DAC member countries and multilateral agencies. The information about the DAC members we use for our analysis is taken from the just mentioned official and published sources. The bulk of it is obtained from the DAC's annual aid reviews. Despite recent improvements in published information, the figures still need to be treated with some caution. A few comments may suffice.

In the past DAC has refrained from committing itself on an actual definition of aid, accepting instead all non-military government contributions in cash and kind from member countries to developing countries into a broad category designated as 'the flow of official financial resources'. Since the publication of the Pearson Report this category has been supplemented by a narrower one, termed 'official development assistance' from which official export credits and official loans on non-concessionary terms have been excluded.

The term 'aid' now refers only to official development assistance which covers resources provided to the developing countries and the multilateral agencies 1) by the public sector, 2) with the promotion of the economic development and welfare of developing

(1) See Dinwiddy, B., Aid Performance and Development Policies of Western Countries, Studies U.S., U.K., EEC and Dutch Programs, New York: Praeger Publishers, 1973.

countries as its main objective and 3) including an element of concessionality (i.e., grants or loans with at least 25 % grant element) (1). In 1978 such flows (net disbursements) amounted to \$19.9 billion.

Total flows (\$71.3 billion in 1978), to which the international target of one per cent of GNP applies, include, beside official development assistance the following categories :

- 1) Other official flows (\$5.2 billion in 1978), i.e., those made on terms approximating to market conditions, e.g., official export credits, the taking up of IBRD bond issues by central banks etc. ;
- 2) Private flows at market terms (\$44 billion in 1978), e.g., direct investment, portfolio investment, private export credits ;
- 3) Grants by private voluntary agencies, e.g., foundations, missions and other non profit-making organizations which have been included in DAC figures since 1970 - approximately \$1.7 billion).

The distinguishing of these various categories has been a useful step towards the formulation of a more precise definition of aid. It should, however, not obscure the fact that the implication of the present definition is still unsatisfactory and allows the inclusion of items which can only doubtfully be interpreted as development aid.

Another problem which must make us careful of any conclusion about aid performance of donor countries, is the arbitrary line that separates developing from other countries. The countries and territories which are recipients of the bilateral flows taken into account by the DAC comprise : 1) all African countries and territories with the exception of South Africa, 2) all American countries and territories with the exception of the U.S. and Canada, 3) all the non-communist Asian and Ocean countries and territories with the exclusion of Australia, Japan and New Zealand, and 4) in Southern Europe :

(1) OECD, Development Cooperation, 1978 Review, p. 171.

Cyprus, Gibraltar, Greece, Malta, Spain, Turkey and Yugoslavia. This large list of developing countries used by DAC explains largely the differences against the figures published by the United Nations. Flows of the last group of recipients are not included in the U.N. figures. Moreover, the DAC subdivision includes a number of countries which are relatively well off in the developing group, so that these countries receive aid which counts in the DAC figures.

Apart from the difficulty of choosing the flows that deserve to qualify as development assistance, there are also problems of measuring the recorded flows. ODA, e.g., may be in cash or kind, in free foreign exchange or tied to donor procurement, and may carry restrictive conditions on its use. Its real value may therefore diverge considerably from its nominal value as recorded in aid statistics. Although statistics on resource flows are given in net terms, it must be emphasized that, in arriving at the net figures only amortization and disinvestment are deducted. The figures often overstate the true net resource flow in any given period and should therefore be read with some caution.

3. Main Characteristics of the Period 1963-1977

As a matter of practical and statistical convenience we will roughly concentrate for the further analysis on the period 1963-1977. For the DAC countries taken as a whole, this period was marked by 1) a significant increase in monetary terms as well as in real terms of the total flow of resources to the developing countries and also an increase in the proportion of these flows to GNP ; 2) a decrease of the official development assistance as a percentage of GNP as well as a percentage of total flows ; 3) an appreciable increase in the volume of resources made available to multilateral aid agencies as well as an increase in its proportion to GNP ; and 4) a significant change within the DAC group concerning the aid performance of the various members. Each of these trends is described with the help of tables and graphs. As a matter of fact, the collection of these data are taken as empirical material in order to test the previously discussed analytical tools and assumptions in the field of

aid performance within the DAC group. We should, however, keep in mind that the aid figures should be read in the context of the reservations on reliability and coverage we noted at the beginning of this section.

a. The Flow of Financial Resources

The main trends in the resource flows of the DAC group to the developing countries and multilateral agencies are indicated in Table VI-1. It is estimated that the total net flow of official

Table VI-1 The Flow of Financial Resources to Developing Countries and Multilateral Agencies (DAC Countries (a))
Net disbursements (b) - \$million

	1963-1965	1966-1968	1969-1971	1972-1974	1975-1977	1978(c)
Official Development Assistance (ODA)	5,873.1	6,276.1	7,022.57	9,743.77	13,982.77	19,881.8
as % of GNP	0.48	0.40	0.34	0.32	0.33	0.35
as % of TRF	61.7	53.3	44.5	40.7	32.1	27.9
Other Official Flows	194.4	567.8	977.23	2,064.1	3,216.0	5,214.3
Private Voluntary Agencies	-	-	-	1,207.4	1,395.0	1,663.2
Private Commercial Flows	3,468.9	4,934.0	7,184.46	10,968.1	24,944.0	44,611.3
as % of GNP	0.28	0.31	0.35	0.36	0.59	0.78
as % of TRF	36.5	41.9	45.5	45.8	53.3	62.5
Total Resource Flows (TRF)	9,512.4	11,778.13	15,773.7	23,967.03	43,538.1	71,370.6
as % of GNP	0.77	0.75	0.78	0.79	1.03	1.26

Notes : (a) The 17 countries which are at present members of the Development Assistance Committee are Australia, Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Italy, Japan, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom and the United States. The aggregate figures of the period 1963-69 take the aid performance of the then member Portugal into account and exclude the aid disbursements of Finland and New Zealand which only became member of the DAC in the 1970s. From 1970 the aggregate figures include the aid contributions of these two new members and exclude Portugal which has left the DAC.

(b) Net disbursements, net of amortisation and disinvestment, current prices.

(c) Included capital subscriptions to multilateral agencies under the form of bills payable at sight.

Sources : OECD, Development Cooperation, Annual Aid Reviews.
OECD, Flow of Resources to Developing Countries, Paris, 1973.

and private resources has increased from 9.5 billion in 1963-1965 to \$ 43.5 billion in 1975-1977, rising significantly as a share of GNP from 0.77 per cent to 1.03 per cent. Between 1963-1965 and 1972-1974 the total flows increased at current prices and exchange rates by some \$ 14 billion and from 1972-1974 to 1975-1977 by a further \$ 19.6 billion. In 1978 the total flows amounted to \$ 71.4 billion. Concerning the fraction of the total flows in GNP, it is only in the last years that the United Nations' one per cent target has been reached.

b. The Flow of Official Development Assistance

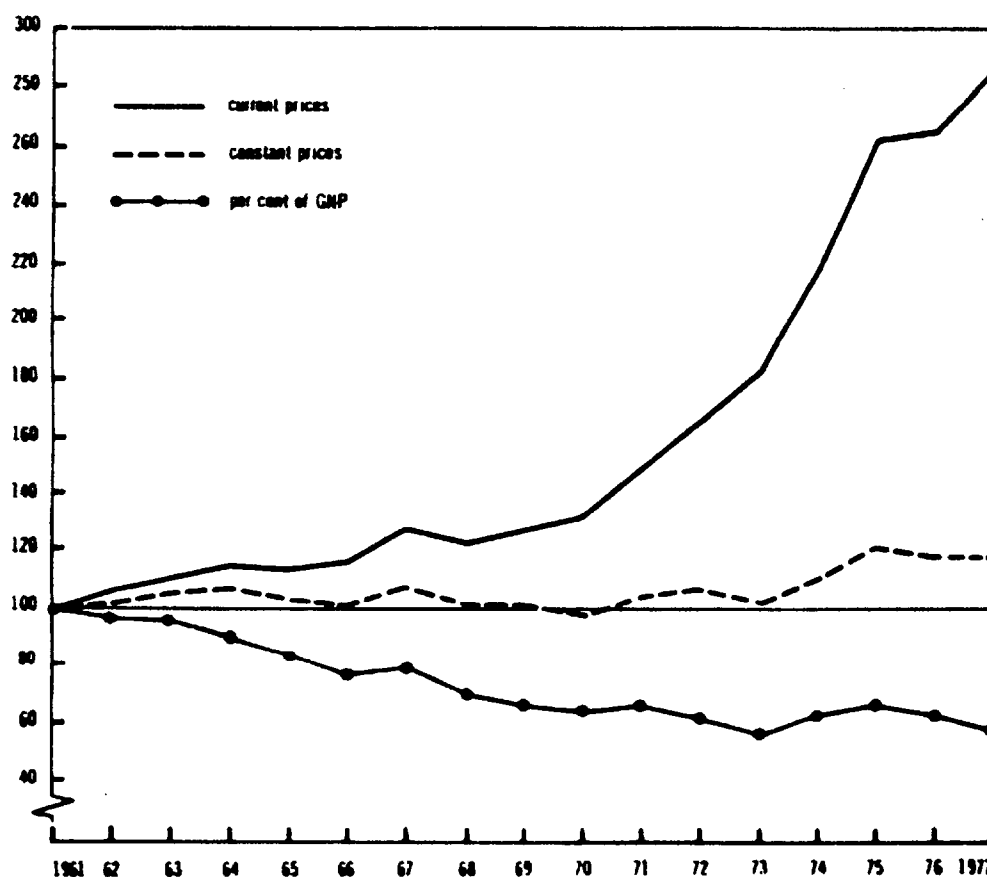
The Official Development Assistance (ODA), the relatively new concept introduced by the DAC, is the concept to which 'aid' is referred. The record of the disbursements of ODA by DAC members over the period 1963-1977 can only be described as dismal. The ODA as a percentage of GNP shows a long-term decline from the peak in the early 1960s. In fact, since that date, the DAC ODA/GNP ratio has fallen every year except four (1967, 1971, 1974 and 1975). This long-term decline in the ODA/GNP ratio has by no means implied a decline of ODA disbursements in absolute terms. At current prices they have risen permanently over the whole period with steep increases from 1970 onwards. However, the nominal increase in the DAC total aid volume between 1963-1965 and 1975-1977 from \$ 5.9 billion to \$ 14 billion has nearly completely been offset by higher prices, so that there has only been a very modest change in the volume of real resources transferred in this period. In short, taking account of inflation on the basis of the GNP deflator and specific ODA price deflators, the yearly net ODA disbursements of all DAC countries combined remained approximately stable in real terms in the 1960s and have increased somewhat in the 1970s. These trends in the ODA aid flows are shown in Table VI-2 and Figure VI-1.

Table VI-2 DAC ODA Volume in Real Terms
(on the basis of the GNP deflator)
(1961=100)

1962	.....	102.4	1970	.....	98.3
1963	.....	106.1	1971	.....	103.7
1964	.....	106.7	1972	.....	105.6
1965	.....	102.9	1973	.....	101.5
1966	.....	101.0	1974	.....	111.1
1967	.....	108.3	1975	.....	120.7
1968	.....	100.9	1976	.....	118.4
1969	.....	100.6	1977	.....	117.9

Source : OECD, Development Cooperation, Review 1978, p. 124.

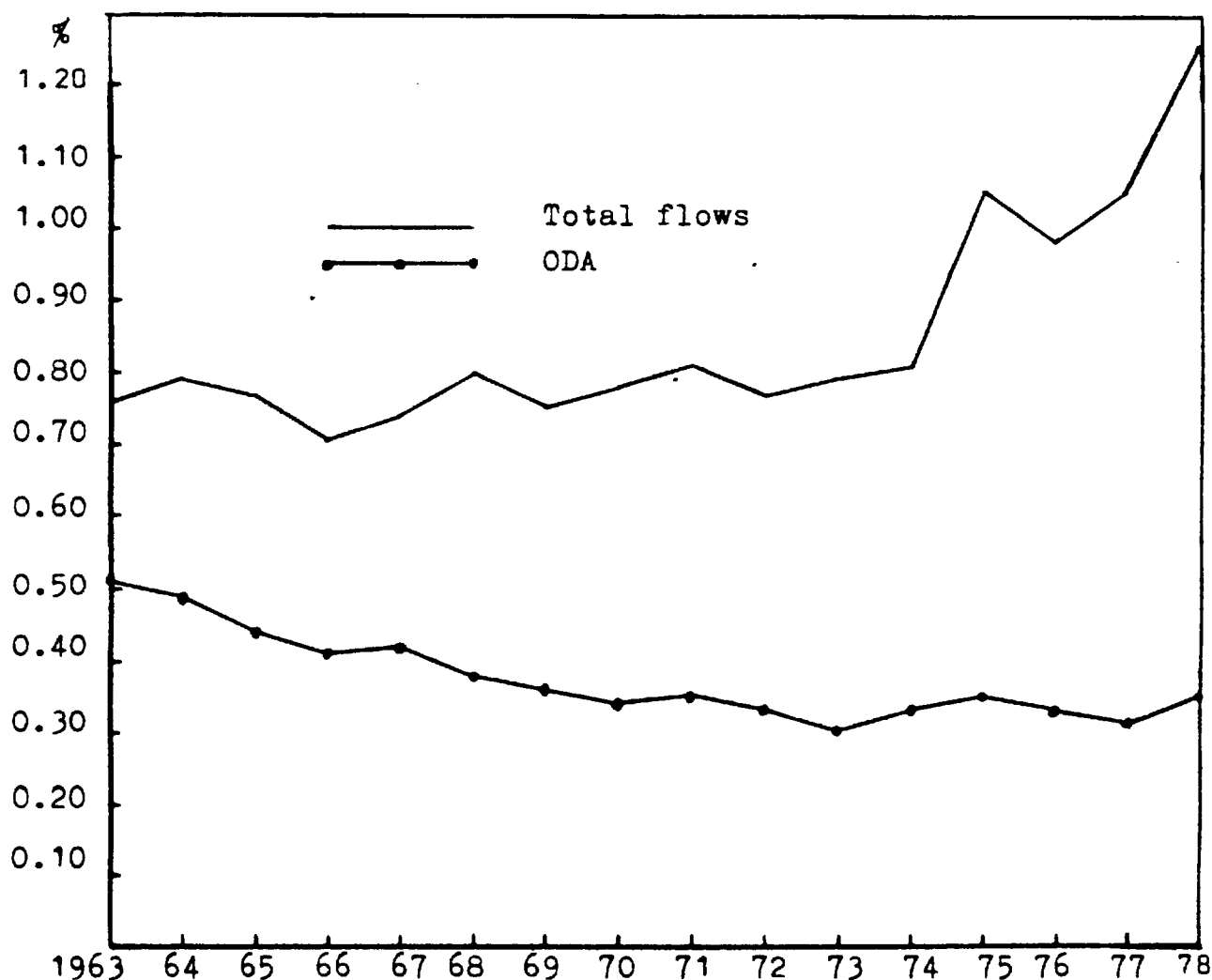
Figure VI-1 DAC ODA Net Disbursements (1961 = 100)



Source : OECD, Development Cooperation, Review 1978, p. 124.

In Figure VI-2 the diverging trends of the net disbursements of the total flows and the ODA as percentages of GNP are drawn. Net ODA flows account for one third of the total net flows of resources (32.1 per cent in the period 1975-1977 compared with 61.7 per cent in 1963-1965). This decline is not due to a fall in the amount of the ODA made available but to the fact that private resource flows have risen much faster. In 1963-1965 the

Figure VI-2 DAC Flows as Percentage of GNP
(Net disbursements, 1963-1978)



Source : OECD, Development Cooperation, Annual Aid Reviews.

Private Commercial Flows counted for 36.5 per cent of the total resources ; they increased their share to over 50 per cent in the period 1975-1977 (see Table VI-1). In the next section we introduce some additional aspects to the general picture of the aid performance of the DAC. They will place DAC's development assistance in its proper perspective.

4. Aid in Perspective

An important element in the attempt to offer a realistic picture of the aid performance of the DAC countries is the need to place the aid effort of member countries in perspective, especially as far as its effects on donors' economies are concerned. In general, people are ill-informed as to the size of the aid effort their countries contribute to developing countries. They often over-estimate the size of the aid effort.

a. The Real Value of Aid

One reason for the public's tendency to exaggerate the effort by their countries is that in most public statements aid is conventionally measured in current dollars. This presented little difficulty in the 1960s when exchange rates against the dollar were generally fixed and when the prices of exports to the developing countries rose only slowly - much more slowly, in fact, than domestic prices in the donor countries. In the last years, however, the situation has changed sharply with increases of export prices of aid-financed goods and of exchange rates of many donors against the dollar.

Each of these factors has meant that the dollar figures for recent years have presented an inflated picture of the changes in real terms. Applying the ODA deflator series to the nominal figures for ODA from DAC members gives an estimate of the evolution of ODA in real terms. A comparison between nominal dollar increases and deflated increases for individual countries between 1970 and 1977 is shown in Table VI-3. It clearly shows the poor

performance of countries like the U.S., the U.K. and Italy, and to a lesser extent of France, Germany and Australia.

Table VI-3 Increases in ODA at Current and Real Prices (1970-1977) (Percentages)

Country	Increase in ODA, 1970 - 1977	
	In current prices	After applying ODA deflator
Australia	+ 110.8	+ 2.42
Austria	+ 1011.3	+ 408.4
Belgium	+ 210.-	+ 31.5
Canada	+ 186.3	+ 67.43
Denmark	+ 336.4	+ 107.8
Finland	+ 616.2	+ 217.65
France	+ 133.4	+ 8.99
Germany	+ 218.5	+ 7.72
Italy	+ 26.4	- 33.-
Japan	+ 211.-	+ 50.9
Netherlands	+ 358.-	+ 104.39
New Zealand	+ 283.2	+ 87.59
Norway	+ 704.6	+ 260.82
Sweden	+ 566.1	+ 193.85
Switzerland	+ 294.-	+ 66.79
United Kingdom	+ 104.5	- 0.56
United States	+ 36.5	- 22.9
DAC Total	+ 116.5	+ 8.76

Source : OECD, Development Cooperation, Annual Aid Reviews.

b. Aid Flows and GNP

Another element which may put scientific undertaking of the study of the aid performance of donor countries in its proper perspective is the comparison between aid flows and national product. The GNP percentage remains the most familiar presentation

of aid flows in the perspective of the donor countries. However, if one is looking at the persistently declining trend of the ODA percentage of the total DAC members' GNP from around 0.5 per cent in the early 1960s to just over 0.3 per cent in recent years, one easily forgets that either 0.5 or 0.3 per cent of GNP is a remarkably small part of DAC resources. This very modest aid effort in terms of GNP makes the usefulness of any abstract model in the field of foreign aid quite restrictive.

The relatively small amounts of resources involved in development assistance may give the donor countries a wider margin of flexibility in the pursuit of their own policy objectives and/or motives, and that in an international system which gives little room for manoeuvring. In other words, these modest aid flows in terms of GNP give donor countries the possibility to adapt their aid effort much quicker to changing economic and political circumstances of the international system. This may have an immediate impact on the aid performance in general, and on the composition of the aid flows. This is a conclusion for DAC countries as a group. In fact, several countries have significantly increased their ODA/GNP ratio, in particular, the Scandinavian countries, Canada and the Netherlands.

c. Aid in Relation to Budgetary Expenditures

A factor which complements the former one is the relation between the aid effort and the total budgetary expenditures. Although it has been a major concern of aid donors and of the DAC to measure the relative aid burden (1), one should not forget that we are only talking about a very small part of national budgets devoted to development assistance.

The major share of DAC members' ODA is financed out of budgetary appropriations subject to regular parliamentary review. Aid as a percentage of public sector expenditures is, therefore, an

(1) See Mikesell, R.F., The Economics of Foreign Aid, London: Weidenfeld and Nicholson, 1968, p. 237-246 ; Pincus, J., Economic Aid and International Cost Sharing, Baltimore: Johns Hopkins University Press, 1965, Chapter 3.

important expression of a country's interest in development assistance. In fact, for all countries, aid forms a very small part of national budgets. As an example, the proportion of aid to total public expenditure in 1973 is shown in Table VI-4. The ODA disbursements as a share of public expenditure for all DAC countries amounted to 0.9 per cent and in no case exceeded 1.6 per cent.

Table VI-4 Aid and Other Public Sector Expenditures (1973) (Percentages)

Country	Defense expenditures as share of public expenditure	Health expenditures as share of public expenditure	ODA disbursements as share of public expenditure
Australia	9.7	7.4	1.5
Austria	2.8 ^a	9.4 ^a	0.4 ^a
Belgium	6.3	. .	1.3
Canada	. .	. .	1.2
Denmark	4.6 ^a	9.5 ^a	1.2 ^a
Finland	4.3	11.8	0.5
France	. .	. .	1.6
Germany	7.5	. .	0.8
Italy	5.2	3.0	0.3
Japan	. .	. .	1.1
Netherlands	6.3	. .	1.1
New Zealand	. .	. .	. .
Norway	6.9	2.3	1.0
Sweden	6.7 ^a	10.4 ^a	1.2 ^a
Switzerland	. .	. .	. .
United Kingdom	11.7	9.3	0.9
United States	18.0	1.1	0.7
Total DAC	. .	. .	0.9 ^b

a. 1972

b. Includes estimates for New Zealand and Switzerland

Source : OECD, Development Cooperation, Review 1975, p. 103.

The comparison of these figures with the defence or health expenditures as a share of public expenditure, reveals a rather low profile in the aid effort of the donors. The hard fact is that aid must compete with other forms of public expenditure, many of which are not only important but of particular interest to that country or to the taxpayer, such as defence, health, housing, education, etc. And at times of budgetary stringency, aid programs are a particularly vulnerable category.

However, some countries have recognized the importance of trying to insulate aid from general budgetary cuts. In particular, the Scandinavian countries have been successful in insulating the aid budget from the reduction of planned government expenditures. Although the aid effort in terms of the share of public expenditure is quite small for all DAC members, the efforts made by some donors to safeguard the aid budget from restrictive budgetary measures irrespective of the economic situation, do say something about the actual objectives and motives of the development assistance by these countries.

Conclusion

As the Second Development Decade has come to an end and perspectives for development cooperation in the 1980s are opening up, one may be induced to make a few concluding remarks. The 'International Development Aid' as a historical phenomenon is a concept that has been changing its content and objectives since it was introduced as an aspect in international relations. The spirit of solidarity, which characterized the immediate aftermath of World War II, led to the creation of a number of important international organizations. Important was the dominant position of the United States in restructuring and guiding the international relations. Also in the domain of development assistance the United States acquired world leadership. Identifying its own national interest with that of the world at large, the United States allocated its aid out of an enlightened self-interest. The Cold War period, however, introduced a foreign policy view-element in the development aid, so that aid became a mere function of the national security objective of the U.S.

The year 1960 may be considered a milestone in the historical evolution of 'International Development Aid'. The search for a more coherent basis of relations among developed and developing countries began systematically with the concept of a 'Development Decade'. Moreover, some European countries became important contributors of bilateral aid. Still, the historical and economic relations among some developed and developing countries made foreign aid an instrument of predominantly national interest. Emphasis was also more and more put on the financial, quantifiable aspect of the aid performance. The optimism of the early 1960s, however, diminished and made place for the more realistic notion of development cooperation. The UNCTAD conferences provided the institutional basis for this shift of responsibility.

The many problems at the beginning of the Second Development Decade changed the international environment of development cooperation. The pervasive and global nature of the problems called for

cooperative international frames of solutions, hence the increasing role of multilateral agencies.

While the last two decades can be viewed as targeting decades, when there was agreement on new directions and goals, now more stress is being put on institutional innovation and reform. It seems essential to adopt a framework of mutual cooperation which addresses itself to overall common interests, while allowing for flexibility of implementation by individual countries. The basic needs approach to development should be counted as one of the important contributions to a better coherence in development cooperation (1).

Up to now we described the history of the phenomenon of international development aid and presented some of the general characteristics of the aid performance of a specific donor group, i.e., the DAC. The next chapter will draw on this descriptive analysis of the phenomenon of international development aid. The aid performance of the DAC will then be assessed on the basis of the hypotheses we analyzed in earlier chapters.

(1) For a fuller explanation of the Basis Needs Approach see OECD, Development Cooperation, 1977 and 1978 Review.

CHAPTER VII THE RATIONAL ACTOR APPROACH IN THE AREA OF DEVELOPMENT COOPERATION

Introduction

In the former chapter we introduced international development aid as the broad area in which the Rational Actor Approach towards international cooperation should be assessed. We described the history of development aid since World War II and indicated the general characteristics of the aid performance of DAC. This final chapter investigates to what extent the analytical tools and assumptions we explained and elaborated in the former chapters can elucidate the actual aid performance of a group of donors.

In a first section we will discuss the nature of the international good of development aid. A discussion of the rationale for foreign aid allocation will lead to an assessment of the public good aspect of development aid. We will further relate the different interests donors pursue in their aid policies to the distinction between bilateral and multilateral aid assistance.

The second section deals with an empirical assessment of Olson's public good model and Ruggie's international cooperation model. Both models, guided by the Rational Actor assumptions, assert that the size of a donor is a distinguishing characteristic of the aid performance of donors.

In a third and final section we will advance some explanatory qualifications for the distortions from the predicted outcomes of both Olson's and Ruggie's models. In short, we try to assess the Rational Actor Approach in the area of development cooperation.

A. The Nature of the International Good of Development Aid

1. Rationale for Development Aid

It is easy to see why underdeveloped countries should want foreign aid, but it is much more complex to see why industrial countries should offer it. Olson has argued that development assistance is provided to developing countries to promote their economic development and, consequently to assure world security and/or stability. Furthermore, he assumes that countries not only benefit from their own foreign aid disbursements, but also from that of other countries. No distinction is made between their own spending and that of other countries. Since the spillovers from the aid expenditures of other donor countries go beyond national boundaries and are characterized by non-rivalness and non-excludability, foreign aid is called an international public good in Olson's model (1).

In this section we want to assess the public good aspect of development aid. This immediately introduces a discussion of the rationale behind the aid policies of countries. We distinguish two views, which are primarily differentiated by the rationale underlying the allocation of aid. This distinction may shed some light on the nature of the international good of development aid and eventually on the actual allocation of official aid.

a. The Altruistic Motive of Aid Allocation

The first rationale explains the allocation of aid in terms of the needs of the recipient, i.e., donors are guided by altruistic motives. It emphasizes the economic assistance utility, suggesting that the provision of aid is designed to promote economic and social development in developing countries. Economic

(1) See Dudley, L., Foreign Aid and the Theory of Alliances, The Review of Economics and Statistics, Vol. LXI, Nr. 4, November 1979, p. 564-571.

assistance is thus the primary rationale for aid (1).

It is said that the amount of aid received by each low-income country is positively related to its economic and welfare needs. The rationale for this relationship is based on two factors. First, the standard models of economic growth assume that increases in investment provide the stimulus for growth. Lack of capital is supposed to be the major obstacle to growth in poor countries. Aid is then considered an important stimulus for economic development. Second, a number of changes in the international system have precipitated an obligation on the part of the industrialized countries to provide aid. In other words, the high-income countries find the gap between developed and developing countries morally unacceptable and provide economic assistance to ameliorate the economic and welfare problems of the low-income countries. The altruistic motive seems to predominate the aid efforts of some donors, such as the Scandinavian countries and, to a lesser extent, Canada and the Netherlands.

Accepting the altruistic motive as the actual rationale for foreign aid, one should easily be tempted to define development aid as an international public good. We believe, however, that development aid guided by altruistic motives contains public as well as private good elements. If one agrees on the existence of a common interest in genuine development assistance, then aid disbursements may be considered as contributions to the provision of the public good of development aid by the donor countries.

(1) There have been arguments that aid does not in fact provide a means of economic assistance on the grounds that aid reduces savings, creates debt-service problems and reduces the capital output ratio. See, for instance, Bauer, P., Dissent on Development, London: Weidenfeld and Nicholson, 1971 ; Griffin, K.B., Foreign Capital, Domestic Savings and Economic Development, Bulletin of the Oxford University Institute of Economics and Statistics, Vol. XXXII, Nr. 2, May 1970, p. 99-112 ; Weisskopf, T.E., The Impact of Foreign Capital Inflow on Domestic Savings in Underdeveloped Countries, Journal of International Economics, Vol. II, 1972-1, p. 25-38.

Although the critics are useful in pointing out that the acceleration effect of aid on development is a function of a large number of factors, generally, it is accepted that aid can provide economic assistance. See, for instance, Papanek, G.F., The Effect of Aid and Other Resource Transfers on Savings and Growth in Less Developed Countries, Economic Journal, Vol. 82, September 1972-2, p. 934-950.

Altruism can also be interpreted as serving long-run self-interest, i.e., a country contributes to the international public good of peace-keeping because of its appreciation of the importance of world stability. A donor's aid efforts can even be based on plain self-interest : the country in question wishes to maximize an objective function which includes the image of itself as an altruistic aid donor in a world of self-seeking interests. Finally, the nature of the international good of development aid depends on the benefits a donor derives from its aid disbursements.

The claims of altruistic behaviour made for aid to developing countries as a contribution to world peace and security are regarded by many scholars as little more than cliché, or at least not based on evidence. Variation in the amounts of aid received by developing countries do not often correspond to the differences in their levels of need. Moreover, one should not forget that aid also provides the donor with an element of control or leverage over the recipient. In other words, donors derive a great number of private benefits from their foreign aid. This pressure of self-interest makes altruism unsatisfactory as a basis for a generalized system in the area of development aid. Foreign policy interests seem to guide much more the aid allocation of donors (1).

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- (1) For examples of studies that reject the view of aid allocation and that suggest a foreign policy basis, see Griffin, K.B. and Enos, J.L., Foreign Assistance : Objectives and Consequences, Economic Development and Cultural Change, Vol. XVIII, Nr. 3, April 1970, p. 313-327 ; Hayter, T., Aid as Imperialism, Harmondsworth, England: Penguin, 1970 ; Jalee, P., The Third World in World Economy, New York: Monthly Review Press, 1969 ; Kaplan, J.J., The Challenge of Foreign Aid, New York: Praeger Publishers, 1976 ; Knorr, K., Power and Wealth, New York and London: McMillan Publishing Cy., 1973 ; Mandorff, H., The Age of Imperialism, New York: Monthly Review Press, 1969 ; Mason, S., Foreign Aid and Foreign Policy, New York: Harper, 1964 ; Morgenthau, H.J., Preface to a Political Theory of Foreign Aid, in Goldwin, R.A., Why Foreign Aid?, Chicago: Rand McNally, 1962 ; Nelson, J.M., Aid, Influence and Foreign Policy, New York: McMillan Publishing Cy., 1968 ; Payer, C., The Debt Trap, Harmondsworth, England: Penguin, 1974 ; Weissman, S. and others, The Trojan Horse, San Francisco: Ramparts Press, 1974 ; Wittkopf, E., Western Bilateral Aid Allocations : A Comparative Study of Recipient State Attributes and Aid Received, Beverly Hills, Ca.: Sage Publications, 1972.

b. The Foreign Policy Motive of Aid Allocation

If self-interest is the guiding principle for the allocation of aid, then development aid is believed to be very much linked to the foreign policy interests of the donors. The foreign policy view emphasizes the instrumental utility of aid, suggesting that its provision is designed to promote the foreign policy interests of the donors. Economic assistance is then a means whereby a donor's interests can be satisfied (1).

These interests rooted in political, economic and historical relationships, can be an achievement of greater national security, economic gains brought about either through opening and maintaining access to developing countries' markets on favourable terms or through ensuring access to raw material supplies in less developed countries at favourable prices, and diplomatic gains achieved through the expansion of prestige and political power. It is assumed that the level of commitment and dependency is a function of the degree of interest that a donor has in a low-income recipient. The rationale underlying this relationship is based on the observation that all states have external interests and are concerned to promote and protect them.

The formulation of these interests results in a multiplicity of goals, which foreign aid may serve for the donor countries. The description of the history of international development aid in Chapter VI has given some indication of the objectives that the major donors pursue in foreign aid.

(1) See, in particular, Griffin, K.B. and Enos, J.L., Foreign Assistance : Objectives and Consequences, Economic Development and Cultural Change, Vol. XVIII, Nr. 3, April 1970, p. 313-327 ; Huntington, S.G., Foreign Aid : For What and For Whom?, in Hunter, R.E. and Rielly, J.E., Development Today, New York: Praeger Publishers, 1972, p. 21-60 ; Mikesell, R.F., The Economics of Foreign Aid, London: Weidenfeld and Nicholson, 1968, p. 1-26.

b.1. U.S. Foreign Aid Objectives

In the case of the U.S., the first development loans were made to a few Latin American countries during the late 1930s and early 1940s. This was an outgrowth of the 'Good Neighbour Policy' inaugurated during the first Franklin D. Roosevelt administration, and of the historical relationship which existed since the early part of the nineteenth century between the U.S. and the other Americas.

In the immediate aftermath of World War II, the U.S. development aid programs became closely related to the broad military and political responsibilities that the U.S. had taken. Foreign aid became an explicit function of the national security objective. U.S. political leaders became convinced that second only to the security of Western Europe was the maintenance of the independence of the developing countries by preventing internal and external Communist aggression, and that development assistance could play a critical role in realizing this objective.

For a long time the national security objective has been emphasized as the guiding principle of the U.S. aid allocation. During the 1950s the bulk of U.S. assistance took the form of 'defence support' providing large amounts of aid designed to enable the recipient countries to maintain a military establishment capable of dealing with actual or threatened aggression, regarded as inimical to U.S. political and security interest. U.S. assistance to countries such as Vietnam, Korea, Thailand, Formosa, etc. are too obvious examples. Briefly, the origins of American foreign aid are deeply rooted in the Cold War period.

Still, in the fifties and the early sixties, the objectives of American foreign aid were often stated in terms of a combination of this national security objective with the more general motivation of worldwide responsibility. Many of the official statements regarding U.S. foreign aid objectives constituted a welding or an identification of short and long term national security objectives, and of humanitarianism or the acceptance of world responsibility for the welfare of other nations.

President Johnson's Foreign Aid Message to Congress on January 14, 1965, may serve as an example : "For our own security and well-being, and as responsible free men, we must seek to share our capacity for growth, and the promise of a better life with our fellow men around the world. That is what foreign aid is all about" (1). Just as the U.S. assumed the primary responsibility for the containment of communism through political and military means, it also assumed the primary responsibility for promoting economic development throughout the 'Free World'. Foreign aid did form an important element in this context.

Besides these two objectives of national security and world-wide responsibility, national economic benefits are sometimes put forward as the rationale of U.S. foreign aid allocation. Aid is then allocated to selected countries in order to promote national economic interests. The pursuit of this goal is seen as one aspect within an overall foreign policy. It means that the donor country has special interests in the development of particular countries. These interests, according to many donors, cannot satisfactorily be met through multilateral aid programs. Thus the achievement of this objective of aid is linked with the preference of bilateral aid over multilateral aid. The preponderance of the U.S. bilateral aid program in the total aid performance seems to suggest that the U.S. imputes quite some importance to the security and economic objectives of foreign aid.

The foreign policy view of aid has been further analyzed and elaborated in a recent article by McKinlay and Little (2). They differentiate five substantive foreign policy models by the type of interests being pursued by the donor. These are 1) development interests, 2) overseas economic interests, 3) security interests, 4) power-political interests and 5) interests in political stability and democracy. These foreign policy explanations

(1) Mikesell, R.F., op.cit., p. 6.

(2) McKinlay, R.D. and Little, R., A Foreign Policy Model of U.S. Bilateral Aid Allocation, World Politics, Vol. 30, 1977-78, p. 58-86.

of aid allocation were tested for the U.S. in the period 1960-1970. The analysis indicated that power - political aid and security concerns were the central interests supported by and controlled through the U.S. aid program.

The changing structure of the international system, however, has cast some doubts on the compatibility of foreign policy objectives with altruistic motives. The present international relations reflect more and more the dominantly political nature of U.S. development assistance.

b.2. European Foreign Aid Objectives

The major Western European powers had a much different historical relationship with the developing world and have had neither the resources nor the same commitment to the Cold War as the U.S. They were concerned with achieving security and prosperity through cooperation among themselves. In the case of the European colonial powers, this concern was extended to their colonies and the dependencies in the developing world.

The nineteenth century attitude of the European colonial powers (France, U.K., Portugal, Belgium and the Netherlands) toward their colonies as mainly sources of national economic gain or of military advantage (i.e., private goods) gradually gave way to attitudes of responsibility for the well-being of dependencies and to the concept of a community of economic, political and cultural interests under the leadership of the metropolitan country. The British Commonwealth of Nations and the French community are the best examples of this evolution. The vast bulk of French, British and Belgian foreign aid has been directed to their respective communities, and is still taking a large part of their development assistance.

Thus, unlike the U.S., the European countries have not had to develop a special rationale in terms of either Free World Security or universal altruism for obtaining public support for their aid programs. Political, cultural, economic and altruistic objectives were merged with a feeling of mutual interest based on a long association between the European powers and the developing areas. To resume the foreign aid objectives of most of the West European

countries have been generated from their historical relationship with the principal recipients and have perhaps been less concerned with global political strategies

c. The Mixed Nature of the International Good of Development Aid

From the above discussion it seems obvious that the international good of development aid has a rather complex nature. To consider development aid an international public good which exhibits non-rivalness and non-excludability is certainly an over-simplification of the reality. States do often make a distinction between their own aid disbursements and that of other countries. The aid effort of a country does not always create spillovers, in the sense that its aid disbursements enter simultaneously into the utility functions of other donors. In other words, interdependence of utilities is not generally valid in the case of development aid. Therefore, it is more relevant to consider development aid as an international good containing simultaneously public and private good elements.

In the discussion of the basic assumptions in Chapter I, we mentioned the variety of objectives which may enter the utility function. Here, we have just indicated the different objectives which may determine a donor's rationale for its aid disbursements. These objectives may vary from altruism over enlightened self-interest to plain self-interest. A theoretical distinction between different types of foreign assistance according to the objectives seems easy. In reality, however, aid policy usually represents a mixture of various purposes in which it is often almost impossible to isolate development aid as a pure component. Both rationales for aid allocation contain public as well as private good elements. Let me explain!

I think one may easily agree with the assertion that there is a common international interest in the economic and social development of the poor nations generally. That implies that one agrees on the existence of the international interest, if only the public

good of peace in the purely political field, and stability and growth in the economic area. Development aid to developing countries in order to promote their economic and social development is then a means to assure world security and/or stability. In other words, the aid efforts of donors should be conceived as contributions to the international public good of world stability. Because of the interdependence of utilities, one might expect the problems of public good allocation to occur.

However, the international common interest in development aid is often tied to the pursuit of national interest. If too many national private benefits are drawn from the foreign aid disbursements, the public good nature of development aid becomes compromised. We already referred to the different objectives a donor is aiming at in his aid policy. From some objectives only national benefits can be derived so that the public good characteristics often do not hold for specific aid contributions. We made it clear that the provision of aid is often justified on national interests which only enter into a specific donor's utility function. These interests range from purely economic objectives (i.e., creation or maintenance of export markets, cheap imports, financial interests, etc.) to non-tangible objectives (i.e., national security, political prestige, goodwill among Third World countries, etc.) Mostly these interests are rooted in historical relationships between donors and recipients. Thus, apart from the general willingness to provide development aid to developing countries, many donors individually are at the same time interested in particular recipients with which they have special relationships for a variety of reasons (i.e., military, economic, political, historical, etc.).

If not self-interest but altruism is the prime motive of a donor, then the consumption of development aid by the developing countries enters into the donor's own utility function. In other words, there is an interdependence of utilities. We do believe that all donors have a genuine interest in the needs of the developing countries. This interest may, of course, vary from donor to donor.

Aid disbursements guided by an altruistic behaviour of donors can be considered a public good if there exists a common international interest in genuine economic and social development of developing countries. If a donor derives specific national benefits from its altruistic aid behaviour, then the aid effort may be considered a mere private good. The pressure of self-interest in the international system makes a generalized system based on altruism in the area of development aid rather difficult.

The actual aid effort of a donor is thus seen as a result of mixed motives, a synthesis of altruism and self-interest. The Rational Actor Approach, however, only deals with rational actors guided by their individual self-interest. The aid donors are thus assumed to pursue objectives (i.e., world stability, national interests) according to the Rational Actor assumptions. Altruistic motives, which do have an importance in development cooperation, are not taken into consideration in the Rational Actor Approach. Within the limits of this framework, we can only state that development aid is an international mixed good containing public and private good elements. In other words, donors do express a common interest in the development of developing countries generally, but derive at the same time important private or national benefits from their foreign aid. We tend to believe that the differing objectives of donors will have an impact on donor's actual aid performance, regardless of the size of the donor.

Resuming, the discussion of the rationale for foreign aid allocation indicates the mixed nature of the international good of development aid. Olson's theory, based on the analysis of the consequences of an international public good on the behaviour of states seems less promising in the area of development cooperation.

2. Bilateral versus Multilateral Development Aid

In Chapter V we introduced an international cooperation model, i.e., a joint production scheme, making a distinction between national and international arrangements. Here we make a distinction between bilateral and multilateral development assistance. The disaggregation of total aid into these two components is tied to the rationale behind the aid performance of donors. Altruism as well as self-interest may tell us something about the way foreign aid is distributed through bilateral and multilateral channels.

It has been said that bilateral aid developed out of a variety of political and economic circumstances which enabled the donor countries to achieve specific foreign policy objectives of security and/or economic benefit. Bilateral aid often reflects a particular or historical association between the donor and the recipient.

Thus, the aid flows from the industrial to the less developed areas cannot always be regarded as a common undertaking of the individual countries. The nationally oriented aid performance of the major donors only serves as an obvious example. Bilateral aid is then often assumed to be oriented to the foreign policy objectives. In other words, much bilateral aid can be viewed as a private good.

On the other hand, one could argue that there is a common interest and a common responsibility in the economic and social development of the Third World. It has often been said that the most appropriate means of achieving this objective is multilateral development assistance. The international aid agencies appear to be less evidently an instrument of national foreign policy.

Some objective reasons for multilateralization of development assistance may be cited : 1) multilateral aid programs may avoid the political antagonisms and conflicts that often result from bilateral aid programs when the donor attempts to impose performance criteria in given aid ; 2) multilateral agencies can be more efficient in stimulating development because their decisions are supposedly based on more technical and objective criteria ;

3) developing countries are likely to be more receptive to the advice of 'neutral' policy experts ; 4) developing countries can feel a sense of greater participation in the aid process ; 5) channelling aid through multilateral institutions may promote a feeling of cooperation rather than competition among major aid donors. Multilateral aid is then often assumed to be orientated to altruistic motives of aid allocation. In other words, much multilateral aid can be viewed as a public good.

This responsibility for actually promoting individual welfare in the developing countries has been of rather limited interest in the donor countries. Few countries are an exception to this general trend. Opposition and reluctance to multilateral aid from major donor countries stem from the vested interests these countries have in providing aid to specific countries and from the fear that they may lose control of multilateral aid programs.

Throughout the years the DAC countries have persisted in giving proof of a clear preference for bilateral development assistance. Reasons for this preference have already been indicated. How evident this preference has been for the DAC is shown in Table VII-1. Bilateral Development Assistance (ODA_B) increased in current prices from \$ 5.5 billion in 1963-1965 to \$ 9.8 billion in 1975-1977. It amounted to more than \$ 13.1 billion in 1978. However, its percentage of GNP dropped drastically from 0.45 per cent in 1963-1965 to a low 0.23 per cent in 1975-1977 (see Figure VII-1).

In recent years, however, multilateral aid appears to have gained some grounds. In fact, if one looks at the trend of the past fifteen years, one can assess that the multilateral agencies of the World Bank Group, the United Nations development system, and the regional development banks have largely increased their share of Official Development Assistance (Table VII-1 and Figure VII-1).

DAC members' contributions to multilateral agencies increased in volume and proportion of GNP. The net disbursements through multilateral channels jumped from a very low 373.53 million in 1963-1965 to a not unimportant \$ 4,181.57 million in 1975-1977.

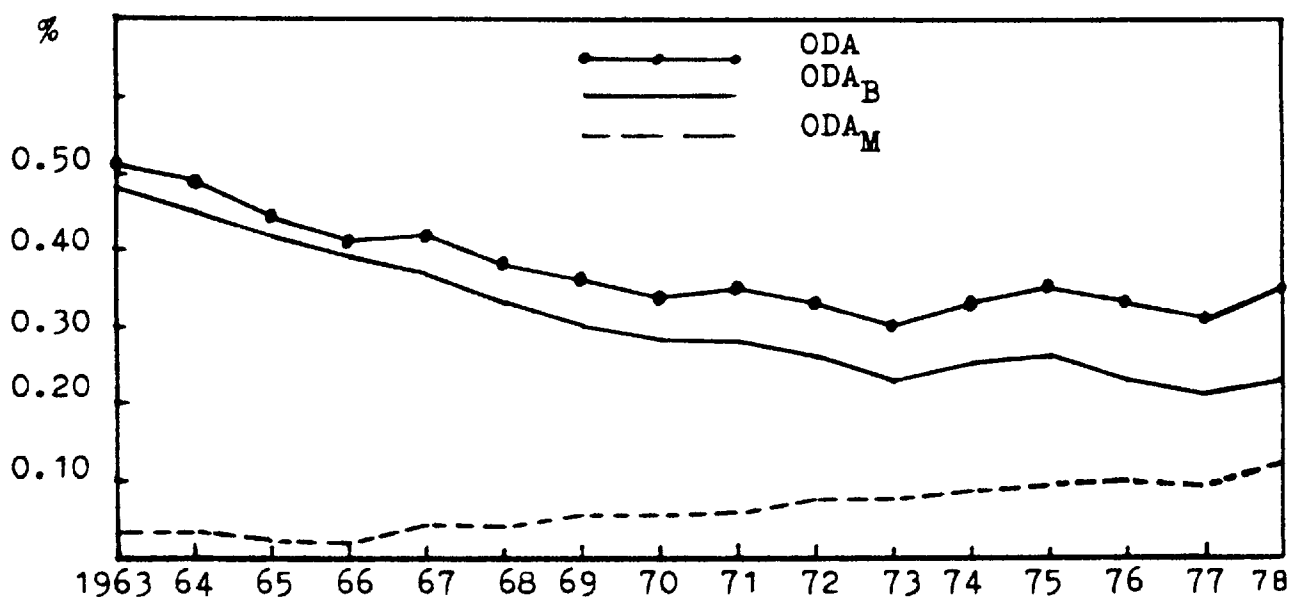
Table VII-1 Net Flows of Multilateral and Bilateral Development Assistance to Less Developed Countries and Multilateral Agencies (DAC Countries)

	Bilateral Official Development Assistance (ODA _B)			Multilateral Official Development Assistance (ODA _M)			Official Development Assistance (ODA)	
	\$million	in % of GNP	in % of ODA	\$million	in % of GNP	in % of ODA	\$million	in % of GNP
1963-65	5,499.5	0.45	93.6	373.53	0.03	6.4	5,873.1	0.48
1966-68	5,691.33	0.36	90.7	584.77	0.037	9.3	6,276.17	0.40
1969-71	5,851.9	0.29	83.3	1,170.67	0.058	16.7	7,022.53	0.34
1972-74	7,328.63	0.24	75.2	2,415.2	0.08	24.8	9,743.93	0.32
1975-77	9,801.2	0.23	70.1	4,181.57	0.10	29.9	13,982.67	0.33
1978(a)	13,122.6	0.23	66.0	6,759.3	0.12	34.0	19,881.8	0.35

(a) Included capital subscriptions to multilateral agencies under the form of bills payable at sight.

Source : OECD, Development Cooperation, Annual Aid Reviews.
 OECD, Flow of Resources to Developing Countries, Paris, 1973.

Figure VII-1 DAC ODA, ODA_B, ODA_M Flows as Percentages of GNP (Net Disbursements, 1963-1978)



Source : OECD, Development Cooperation, Annual Aid Reviews.

They amounted to \$ 6,759.3 in 1978. After a drop in the middle of the sixties, both in absolute terms and as a share of total aid, contributions to multilateral agencies have been rising very rapidly to reach nearly 30 per cent of total aid in 1975-1977, compared with the 6.4 per cent in 1963-1965. Also the fractional share in GNP increased considerably from 0.03 per cent in 1963-1965 to 0.10 per cent in 1975-1977. This long term positive trend of multilateral assistance as a percentage of GNP could only minimally influence the declining trend of the total ODA. Still 70 per cent of overall ODA was channelled through bilateral contributions in 1975-1977.

A breaking-down of these aggregate aid figures of the DAC may suggest some of the determining factors of the overall declining trend of the DAC aid effort and may add some indications of the specific developments of the aid performance of individual DAC members. The record of the net flow of total ODA disbursements and of bilateral and multilateral aid of the 17 countries which are at present members of the Committee is given in Tables VII-2 and VII-3.

Table VII-2 Net Flows of the DAC Members'
Total Official Assistance to
Developing Countries and
Multilateral Agencies

Donors	1963-1965		1975-1977		1978(a)	
	Value \$ million	as % of GNP	Value \$ million	as % of GNP	Value \$ million	as % of GNP
Australia	104.83	0.51	439.47	0.49	587.5	0.54
Austria	7.2	0.08	76.8	0.18	165.8	0.29
Belgium	84.2	0.54	362.93	0.51	536.1	0.55
Canada	79.67	0.17	919.23	0.50	1,059.9	0.52
Denmark	10.6	0.12	225.87	0.58	387.6	0.75
Finland	2.27	0.03	49.2	0.18	54.8	0.17
France	800.1	0.87	2,168.5	0.61	2,705.3	0.57
Germany	434.57	0.41	1,486.27	0.32	2,418.4	0.38
Italy	59.3	0.11	198.23	0.11	175.4	0.07
Japan	165.7	0.21	1,225.67	0.21	2,215.4	0.23
Netherlands	52.2	0.31	741.17	0.81	1,073.5	0.82
New Zealand	8.9	0.19	57.17	0.44	54.9	0.34
Norway	10.27	0.17	232.33	0.74	355.4	0.90
Sweden	31.27	0.16	651.0	0.88	782.6	0.90
Switzerland	9.07	0.07	111.63	0.19	173.3	0.20
United Kingdom	459.93	0.49	870.7	0.37	1,472.4	0.48
United States	3,525.4	0.54	4,166.67	0.24	5,663.5	0.27
Dac Total	5,894.8	0.48	13,982.67	0.33	19,881.8	0.35

(a) Included capital subscriptions to multilateral agencies under the form of bills payable at sight.

Source : OECD, Development Cooperation, Annual Aid Reviews.
OECD, Flow of Resources to Developing Countries,
Paris, 1973.

Table VII-3 Net Flows of the DAC Members' Bilateral and Multilateral Development Assistance to Developing Countries and Multilateral Agencies (Percentage of GNP)

Donors	Bilateral Official Development Assistance (ODA _B)			Multilateral Official Development Assistance (ODA _M)		
	1963-1965	1975-1977	1978	1963-1965	1975-1977	1978
Australia	0.45	0.41	0.39	0.05	0.08	0.15
Austria	0.06	0.13	0.20	0.02	0.05	0.09
Belgium	0.49	0.35	0.32	0.06	0.16	0.23
Canada	0.13	0.29	0.32	0.04	0.21	0.20
Denmark	0.03	0.32	0.42	0.09	0.26	0.33
Finland	0.003	0.10	0.07	0.03	0.06	0.10
France	0.84	0.52	0.49	0.03	0.09	0.08
Germany	0.38	0.23	0.25	0.03	0.09	0.13
Italy	0.08	0.03	0.01	0.03	0.08	0.06
Japan	0.19	0.14	0.16	0.01	0.07	0.07
Netherlands	0.19	0.55	0.60	0.11	0.26	0.22
New Zealand	0.16	0.35	0.28	0.02	0.09	0.06
Norway	0.05	0.39	0.49	0.11	0.34	0.41
Sweden	0.07	0.57	0.55	0.10	0.31	0.35
Switzerland	0.04	0.12	0.12	0.03	0.07	0.08
United Kingdom	0.44	0.24	0.28	0.05	0.13	0.20
United States	0.52	0.17	0.17	0.02	0.07	0.10
DAC	0.45	0.23	0.23	0.03	0.10	0.12

(a) Includes capital subscriptions to multilateral agencies under the form of bills payable at sight.

Source : OECD, Development Cooperation, Annual Aid Reviews.
 OECD, Flow of Resources to Developing Countries,
 Paris, 1973.

A discussion of bilateral versus multilateral aid appears to be less clear than one would think at a first comparison. In the First Development Decade objections against bilateral aid being continued by the erstwhile colonial powers in the newly independent countries were quite obvious. It was said that this represented neocolonialism and the continuation by other means of the previous domination in order to pursue mere national interests. From a slightly different angle, this type of objection was extended to the Cold War aspect of bilateral political aid. It was argued that politically motivated aid is both less effective and morally objectionable. Experience in a number of recipient countries tend to bear out these criticisms.

However, this line of criticism of the aid-giving process and its motivation in the bilateral field adds some other elements to the discussion, i.e., whether a switch from bilateral to multilateral aid will in all circumstances mitigate these shortcomings ; whether the total amount of aid will remain unaltered ; and finally, whether the switch towards multilateral aid channels will increase the effectiveness of aid. Facts have indicated that the size of the aid effort has not remained on the same scale when aid has been switched slowly to multilateral channels. Thus its effectiveness will have to increase more than the size decreases if the switch is to be favourable to the mitigation of international inequality.

Moreover, even political motivations in giving aid must not be condemned out of hand. It is a perfectly understandable decision that Britain, for example, supported primarily the Commonwealth nations. This Commonwealth responsibility, because of the moral obligation felt, also created a political will to make sacrifices in providing resources which otherwise would not have been undertaken on that scale. Thus bilateral aid flows in many circumstances have represented an addition to what could be forthcoming on a multilateral basis. It is then also significant that in the beginning of the First Development Decade the relative contributions of these countries which accepted political responsibi-

lities, for example, France, Britain and Belgium, were higher than those which were making their contributions in a spirit of altruistic disinterestedness.

However, there is no doubt that some aspects of the use of the power inherent in the provision of aid to influence the pattern of development plans were not consistent with the interests of the developing countries, and were only pursued to gain purely national benefits. In short, bilateral development assistance is influenced by a complex mixing of various motives, ranging from purely national interests to genuinely altruistic motives.

Although the picture of the aid effort of the DAC members has been changing over the years, it remains difficult to disentangle the actual motives which guide the direction of the aid flows. It is in this perspective that a number of arguments is put forward which support the contention that it is a reform of bilateral aid rather than an unconditional switch towards multilateral aid that is required.

The first is that the effective decision-making in the international agencies as against formal responsibility of national aid distribution is to a very large extent concentrated among much the same countries against whom the protest against bilateral aid was directed. This is not surprising. Most large and highly developed areas have had a colonial past. The only large scale exception to this is the U.S., and one of the important effects of the Cold War has been to make the impartiality and disinterestedness of the U.S. in international aid agencies even less credible.

In the second place, it is not to be supposed that the mere fact that an international aid agency is not national, will ipso facto endow its principles and modes of operation with wisdom, charity and efficiency. The financial and monetary criteria underlying the operations of these multilateral agencies and, consequently, their influence on the development of the developing countries do not seem to have given full satisfaction or proven invariably successful. The yearly budget struggle, the favour extended to spectacular single projects, the problems posed by multiplicity of,

and overlap, if not conflict between multilateral aid agencies, their efforts at building up bureaucratic empires and their simple-minded technocracy, these are all actual problems which have to come in for a just assessment of the various aid flows to multilateral channels.

Thirdly, we may ask ourselves if governments' contributions to the multilateral institutions are always related to any objective view of these agencies' aid-giving performance. In fact, it may seem plausible that the multilateral/bilateral ratio of resources, which was - according to Ruggie's hypothesis - negatively correlated with GNP till the mid 1970s, has shifted within the overall trend of official aid flows owing to specific local and political factors. Discrete national considerations do indeed increasingly influence the scale of multilateral flows. Any further retrenchment by the U.S., any deterioration of the Atlantic Alliance, any increase in interest in European regional institutions, or any increased importance of OPEC as a donor, is bound to have a major impact on multilateral flows. As a result, the World Bank Group, the regional development banks and the U.N. development system - accounting for about 30 per cent of total ODA have come to serve a wide variety of objectives which are not always commensurate with the task of genuine development assistance.

It does not mean, however, that one should be in favour of concentrating aid from multilateral to bilateral channels. Bilateral development assistance is still far bigger than multilateral aid, certainly for the DAC as a group, and I am thoroughly convinced that this discrepancy should be decreased, not increased. However, bilateral aid has had too much abuse, not all justified. Therefore, close scrutiny and critique ought to be exercised over the way in which multilateral aid is channelled and controlled.

We may end this discussion of bilateral versus multilateral aid with some concluding remarks. The arguments favouring multilateral over bilateral, or visa versa, are perhaps more political

and administrative in nature than economic. Foreign aid has always been an instrument of a donor's foreign policy and this instrument has been used not only in the Cold War or the immediate aftermath of the colonial period but is also used now by individual donors for promoting their special foreign policy interests. It is unlikely, therefore that nations will renounce all bilateral aid in favour of multilateral assistance. However, at the same time all bilateral aid cannot simply be identified with the donor's national interests.

Furthermore, it may be argued that the elimination of bilateral aid would result in a substantial reduction of total aid to developing countries, since multilateral assistance would not command the public support based on both economic and national interests that bilateral aid engenders.

Nevertheless, the donor countries have a broad area of collective interest in promoting economic progress in the developing countries. Hence, a considerable portion of the existing bilateral aid effort is not uniquely associated with a special national interest of the donor, but supports a collective interest which could be served by multilateral aid agencies if they could increase the effectiveness of the genuine aid effort of donors.

B. Empirical Assessment of the Models

1. Olson's Public Goods Model

Do small countries tend to be free riders, exploiting the larger countries by spending relatively little themselves while deriving benefits from larger countries' expenditures? Olson and Zeckhauser proposed their 'Economic Theory of Alliance' to explain this phenomenon. Lumping foreign aid with defence, they argued that the smaller countries were assuming an insufficient share of the common burden of promoting world security.

The actual starting point of the empirical analysis is Olson's Hypothesis Three of his 'Economic Theory of Alliance' : "Among a group of developed nations there will be a significant positive correlation between foreign aid expenditures as a percentage of national income and the size of the national income (1)". One set of data revealed a correlation between national income and total grants and loans to underdeveloped countries as a percentage of national income in 1960 of $r_s = 0.77$. A different set of data for the different years (1962) showed a correlation between GNP and total aid as a percentage of GNP of $r_s = 0.439$. With the small sample of 12 nations this value fell short of the 0.05 level of significance.

Olson concluded that "both sets of data yield correlation coefficients suggesting the expected positive relationship, but in one case the result is clearly statistically significant and in the other case it falls somewhat short of the 0.05 level of significance". These results bring him to the conclusion that "there is some tendency toward disproportionate burden sharing, but that the private or purely national benefits from foreign aid are probably also very important (2)". In other words, although the industrialized Western nations express a common interest in the

(1) Olson, M. and Zeckhauser, R., An Economic Theory of Alliance, The Review of Economics and Statistics, Vol. 48, Nr. 3, 1966, p. 275.

(2) Ibid., op.cit., p. 276.

development of the developing countries generally, many donors individually are interested primarily in particular underdeveloped areas with which they have special relationships, so that the presence of a private good element in the pursuit of the international good of development assistance seems to be quite relevant.

This Olson hypothesis has now been tested for the DAC members in the period 1963-1977. Since there is no assurance that the data we use are parametrically distributed, a non-parametric or distribution-free statistical test is applied. The Spearman rank correlation coefficient between GNP and the total flow of resources as a percentage of GNP is $r_s = 0.54$ in the period 1963-1965, which is significant at the 0.05 level. When the relation between GNP and ODA as percentage of GNP is tested, a significant positive correlation is found for $r_s = 0.63$. Resuming, these two sets of data yield correlation coefficients suggesting the positive relationship Olson predicted in his hypothesis (see Table VII-4).

However, if the same empirical test is applied for the period 1975-1977, we arrive at a contrasting result ($r_s = -0.06$) and Olson's hypothesis seems to be rejected by the test. In accordance with this result one has to accept the null-hypothesis, i.e., there is no significant positive correlation between the two variables (see Table VII-5). In other words, size does not seem to provide a decisive explicative and predictive element in the aid performance of a group of donors.

Table VII-4 An Empirical Test of Olson's Model
(1963-1965)

Country	Gross National Product 1963-1965 (\$mia)	Rank	Total Flow of Resources as Per- centage of GNP	Rank	ODA as percen- tage of GNP	Rank
United States	646.26	1	0.78	6	0.54	2
Germany	105.44	2	0.65	7	0.41	6
United Kingdom	93.52	3	0.95	5	0.49	5
France	91.72	4	1.42	1	0.67	1
Japan	79.03	5	0.44	10	0.21	8
Italy	54.54	6	0.50	9	0.11	14
Canada	46.84	7	0.31	13	0.17	10
Australia	20.69	8	0.58	8	0.51	4
Sweden	18.58	9	0.34	12	0.17	11
Netherlands	16.98	10	0.96	4	0.31	7
Belgium	15.49	11	1.20	3	0.54	3
Switzerland	12.79	12	1.31	2	0.07	16
Denmark	9.04	13	0.21	15	0.12	13
Austria	8.74	14	0.28	14	0.08	15
Finland	7.83	15	0.04	17	0.03	17
Norway	6.37	16	0.43	11	0.16	12
New Zealand	4.77	17	0.21	16	0.19	9

anks :

GNP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
TFR as % of GNP	6	7	5	1	10	9	13	8	12	4	3	2	15	14	17	11	16
ODA as % of GNP	2	6	5	1	8	14	10	4	11	7	3	16	13	15	17	12	9

ource : All data are taken from OECD, Resources for the Developing World 1962-1968, Paris, 1970.

Table VII-5 An Empirical Test of Olson's Model
(1975-1977)

Country	Gross National Product, 1975-1977 (\$mia)	Rank	Total Flow of Resources as % of GNP	Rank	ODA as % of GNP	Rank
United States	1,708.47	1	0.81	12	0.24	12
Japan	575.93	2	0.72	13	0.21	13
Germany	459.57	3	1.17	8	0.32	11
France	354.93	4	1.36	6	0.61	4
United Kingdom	232.77	5	1.53	4	0.37	10
Canada	182.57	6	0.94	11	0.50	7
Italy	178.9	7	0.95	10	0.11	17
Netherlands	91.5	8	1.84	2	0.81	2
Australia	90.4	9	0.64	15	0.49	8
Sweden	73.87	10	1.55	3	0.88	1
Belgium	70.53	11	1.42	5	0.51	6
Switzerland	59.23	12	3.36	1	0.19	14
Austria	42.1	13	0.71	14	0.18	15
Denmark	38.83	14	1.04	9	0.58	5
Norway	31.57	15	1.35	7	0.74	3
Finland	27.87	16	0.27	17	0.18	16
New Zealand	12.97	17	0.54	16	0.44	9

anks :

GNP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
TFR as % of GNP	12	13	8	6	4	11	10	2	15	3	5	1	14	9	7	17	16
ODA as % of GNP	12	13	11	4	10	7	17	2	8	1	6	14	15	5	3	16	9

Source : Data are taken from OECD, Development Cooperation, Annual Aid Reviews, 1976, 1977, 1978.

If we look at the trend from 1963-1965 to 1975-1977, we are inclined to conclude that the relationship between GNP and ODA as a percentage of GNP shows a positive correlation and consequently seems to confirm Olson's hypothesis for the sixties. However, the relationship between the two sets of variables shows a declining trend and the correlation coefficient becomes not significant for the seventies (Table VII-6). Olson's model predicting a tendency towards disproportionate burden sharing is not confirmed for the whole period. The most reasonable inference we may draw at this moment is that the size of a donor has become a less determining factor in the analysis of the aid performance of donor countries. The tendency towards disproportionate burden-sharing, which seems to have been present in the sixties - although even there one should be careful in drawing straight forward conclusions from the allegedly disproportionate contributions of large donors - can certainly not be deduced from the figures we used to test Olson's hypothesis in the seventies. The result of the empirical test implies that it is not so sure that small countries contribute disproportionately less to development assistance than big countries.

Table VII-6 Development Assistance Correlations
(Olson's Model)

	1963-1965	1966-1968	1969-1971	1972-1974	1975-1977
GNP - Total Flow of Resources as Percentage of GNP	0.54	0.51	0.51	0.50	0.17
GNP - ODA as Percentage of GNP	0.63	0.58	0.33	0.04	-0.06

2. Ruggie's International Cooperation Model

Olson's 'Economic Theory of Alliance' was primarily concerned with defence alliances and, in particular, with the application of his public good model to the NATO defence alliance. The implications for foreign aid spending were not studied in detail. In the previous chapter we have already indicated the variety of objectives for which foreign aid can be pursued. Furthermore, there is evidence that multilateral aid, that is, funds from several countries channelled through a joint mechanism, is determined by other objectives and different allocation mechanisms than bilateral aid, which is transferred directly from donor to recipient. Therefore, it would be desirable to disaggregate total aid into these two components. Ruggie's international cooperation model introduces this distinction between bilateral and multilateral aid flows as an important element in the analysis of the aid performance of donors.

Actual starting point of this second line of empirical analysis is Ruggie's hypothesis : "There is an inverse relationship between the ratio of multilateral/bilateral assistance and the total level of national resources (1)". Rank correlations were computed for each year, from 1960 to 1968, for a sample drawn from members of DAC. The correlation coefficients were found significantly negative and almost equally high for the entire period. Ruggie's hypothesis, which - as we may recall - was based on an economics of scale argument, predicted that big countries spend relatively more on bilateral than on multilateral aid, compared to small countries.

We tested Ruggie's hypothesis for the period 1963-1977. The Spearman rank correlation coefficient between GNP and the multilateral/bilateral assistance ratio for the period 1963-1965 confirms the predictive negative relation, i.e., $r_s = -0.72$. This value is significant at the 0.05 level (Table VII-7). Thus,

(1) Ruggie, J.G., Collective Goods and Future International Collaboration, American Political Science Review, Vol. 66, 1972-2, p. 881.

Table VII-7 An Empirical Test of Ruggie's Model
(1963-1965)

Country	Gross National Product 1963-1965 (\$mia)	Rank	Ratio $\frac{ODA_M}{ODA_B}$	Rank
United States	646.26	1	0.0427	16
Germany	105.44	2	0.0757	15
United Kingdom	93.52	3	0.1159	13
France	91.72	4	0.0326	17
Japan	79.03	5	0.0790	14
Italy	54.54	6	0.3390	7
Canada	46.84	7	0.3170	8
Australia	20.69	8	0.1200	11
Sweden	18.68	9	1.4750	3
Netherlands	16.98	10	0.5980	5
Belgium	15.49	11	0.1163	12
Switzerland	12.79	12	0.6680	4
Denmark	9.04	13	0.3090	9
Austria	8.74	14	0.3930	6
Finland	7.83	15	8.46	1
Norway	6.37	16	2.458	2
New Zealand	4.77	17	0.1380	10

Ranks :

GNP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Ratio $\frac{ODA_M}{ODA_B}$	16	15	13	17	14	7	8	11	3	5	12	4	9	6	1	2	10

Source : OECD, Development Cooperation, Annual Aid Reviews.

Table VII-8 An Empirical Test of Ruggie's Model
(1975-1977)

Country	Gross National Product 1975-1977 (\$mia)	Rank	Ratio $\frac{ODA_M}{ODA_B}$	Rank
United States	1,708.47	1	0.441	12
Japan	575.93	2	0.469	10
Germany	459.57	3	0.379	14
France	354.93	4	0.172	17
United Kingdom	232.77	5	0.534	8
Canada	182.57	6	0.706	4
Italy	178.9	7	2.46	1
Netherlands	91.5	8	0.477	9
Australia	90.4	9	0.195	16
Sweden	73.87	10	0.549	7
Belgium	70.53	11	0.466	11
Switzerland	59.23	12	0.619	5
Austria	42.1	13	0.388	13
Denmark	38.83	14	0.807	3
Norway	31.57	15	0.868	2
Finland	27.87	16	0.590	6
New Zealand	12.97	17	0.266	15

Ranks :

GNP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Ratio $\frac{ODA_M}{ODA_B}$	12	10	14	17	8	4	1	9	16	7	11	5	13	3	2	6	15

Source : OECD, Development Cooperation, Annual Aid Reviews.

the two sets of variables yield a correlation coefficient suggesting the negative relationship Ruggie predicted in his hypothesis.

This inverse relationship between GNP and the multilateral/bilateral assistance ratio is confirmed by the test for the subsequent periods, though with a declining trend (Table VII-9). However, the same empirical test for the period 1975-1977 leads to a not significantly negative correlation between the variables ($r_s = -0.25$) (Table VII-8). Ruggie's model predicting a tendency for the small countries to give relatively more aid multilaterally than bilaterally, when compared to the big countries, is not confirmed for the period 1975-1977.

Table VII-9 Development Assistance Correlations
(Ruggie's Model)

	1963-1965	1966-1968	1969-1971	1972-1974	1975-1977
$\text{GNP} - \frac{\text{ODA}_M}{\text{ODA}_B}$	-0.72	-0.77	-0.62	-0.54	-0.25

A conclusion which may be drawn from the results of the empirical testing of Ruggie's model is that the economics of scale argument on which Ruggie's hypothesis has been based, seems to have a diminishing impact on the actual aid composition of the donor countries. This may imply that the size of a country has become a less determining factor in explaining the aid contributions to bilateral and multilateral channels.

Conclusion

The results of the empirical tests of both models, Olson's public good model and Ruggie's international cooperation model, have indicated that a change in the aid performance of the donor countries as regards the aid volume as well as the composition of the development assistance, has taken place during the period 1963-1977. In the sixties, large nations appeared to bear a disproportionate share of the burden of the development assistance, confirming Olson's hypothesis, and small nations appeared to contribute relatively more resources to multilateral aid than big nations, confirming Ruggie's hypothesis. In the seventies, however, the predicted outcomes of both hypotheses were not confirmed by the actual aid flows. This seems to imply that size is not any longer a decisive element in determining the actual aid performance of donors.

C. Re-assessment of the Aid Performance of DAC Countries

In the previous section we indicated that the predicted outcomes of both Olson's and Ruggie's models were not validated by the seventies. In this third and final section we will advance some possible explanations for the distortions from the results the Rational Actor Approach would predict in the area of developing cooperation. Size of a donor country does not seem to be a decisive element in determining the aid performance as Olson's public goods model and Ruggie's joint production scheme tend to indicate. The reasons we will explore in this section are related to the relevance of genuine development assistance, the changing relations with developing countries, the impact of large donors and aid-giving capacity. Some of these suggested explanations may, indeed, have an impact on the fact that the predictions of Olson's and Ruggie's hypotheses are not verified in the actual aid performance of the DAC countries in the 1970s.

1. Relevance of Genuine Development Assistance

While debate continues on whether the foreign policies of small states are or are not generically different from those of large states, interest should also be directed to the 'quality' of their development aid. Olson and Ruggie constructed their hypotheses concerning the relationship between the size of a donor and its actual aid performance on the basis of a single indicator, i.e., ODA as a percentage of GNP. However, we should have to ask ourselves if the nature of the international good of development is best indicated by a single indicator of aid performance. Does it tell us something about the 'quality' of aid that single donors provide? If we focus on a donor's willingness to realize genuine development assistance, attention should also be paid to the concentration of aid flows on low-income recipients and at the aid-tying status. Moreover, the addition of these elements into an assessment of de-

velopment cooperation could also shed some light on the relationship between the size of a donor and its actual aid performance.

a. Aid Share of Low-income Countries

The structure of DAC members' development assistance indicates a shift in DAC ODA allocations in favour of low-income countries and especially of the Least Developed Countries (LLDCs). An analysis of ODA commitments, which have the advantage that they are both forward-looking and a direct measurement of donor's policies does show this increased interest in the needs of the low-income countries. A comparison of ODA commitments between 1970 and 1977 is shown in Table VII-10.

The share of ODA commitments from all sources channelled to low-income countries as a group rose from 53.4 per cent in 1970 to 62.3 per cent in 1977. DAC commitments to low-income countries as a percentage of total DAC ODA_B increased from 53.6 per cent in 1970 to 57.5 per cent in 1977. Its share of commitments going to LLDCs rose significantly from 7.1 per cent to 16.4 per cent.

Table VII-10 ODA Commitments to Low-income Countries (1970 and 1977)

	Total				of which DAC ODA _B			
	1970		1977		1970		1977	
	\$mia	%	\$mia	%	\$mia	% of DAC ODA _B	\$mia	% of DAC ODA _B
Low-income countries	3.9	53.4	15.5	62.3	3.0	53.6	7.7	57.5
of which LLDCs	0.6	8.2	5.1	20.4	0.4	7.1	2.2	16.4
Low middle-income	2.0	27.4	5.6	22.5	1.5	26.8	2.7	20.1
Upper middle-income	1.1	15.1	2.1	8.4	0.8	14.3	1.6	11.9
Higher-income	0.3	4.1	1.7	6.8	0.3	5.4	1.4	10.4
Total	7.3	100	24.9	100	5.6	100	13.4	100

Source : OECD, Development Cooperation, 1978 Review, p. 110.

Different DAC countries have contributed in different ways to these developments. Table VII-11 shows for the 17 DAC members the distribution in 1977 of ODA commitments to the low-income recipient group and the rate of increase of the donor's commitments to the low-income group between 1970 and 1977. The figures indicate that Austria, Switzerland-whose ODA commitments are small in absolute terms-and three Scandinavian countries, Denmark, Norway and Sweden have expanded their aid to low-income countries faster and have concentrated their aid programs most heavily on these countries. The other country which has recorded an exceptionally high rate of growth on its ODA commitments to low-income countries,

Table VII-11 Share of Donors' ODA Commitments to Low-income Developing Countries (a) (1977)

Countries	Share of Low-income Countries (%)	% of donor's GNP	% increase 1977 over 1970
Australia	33.6	0.16	277
Austria	96.8	0.12	1433
Belgium	80.7	0.32	215
Canada	76.0	0.31	203
Denmark	87.5	0.28	828
Finland	52.4	0.04	—
France	28.3	0.17	151
Germany	52.6	0.16	273
Italy	70.6	0.02	52
Japan	71.8	0.19	381
Netherlands	68.2	0.55	837
New Zealand	38.0	0.07	—
Norway	84.8	0.33	574
Sweden	86.9	0.76	936
Switzerland	89.6	0.17	786
United Kingdom	73.3	0.19	121
United States	52.3	0.10	28
DAC Total	57.3	0.16	158

a. Low-income : countries with a per capita income of up to \$ 400 in 1976.

Source : OECD, Development Cooperation , 1978 Review, p. 106.

is the Netherlands. These last four countries have all raised their total aid substantially in dollar volume as well as in share of their GNP. In 1977 these four countries occupied the four top places on the ranking table of aid performance.

The reasons accounting for the lower rates at which the other donors expanded their aid to low-income countries, are varied. The particular choice of the countries with which a given donor cooperates is often determined by factors other than the basic needs of the recipient. In other words, the selection of recipients is much influenced by a series of factors such as the specific interests of donors, the aid-giving capacity, etc. ... Examples are the French traditional concentration of a substantial portion of aid on overseas departments and territories and on francophone countries; the concentration of Japan's ODA on the Asian and Pacific regions; the decision by Australia to give priority to Papua New Guinea in the distribution of its aid, etc. ...

The statistical data from Table VII-12, which gives the share

Table VII-12 Share of Donor's Commitments to LLDCs

	1969-1971	1974	1977
Australia	1.6	1.6	9.8
Austria	7.7	2.4	0.5
Belgium	22.3	16.9	23.6
Canada	6.2	17.5	42.2
Denmark	20.6	32.6	32.3
Finland	—	51.7	46.2
France	8.5	10.0	7.7
Germany	9.1	10.6	16.5
Italy	15.2	25.8	24.2
Japan	1.7	2.4	9.2
Netherlands	2.1	9.0	27.6
New Zealand	—	9.7	13.6
Norway	18.6	28.6	37.6
Sweden	37.1	27.0	36.9
Switzerland	14.8	20.4	28.2
United Kingdom	13.4	10.8	17.2
United States	5.4	8.0	10.4
DAC Total	8.0	9.9	16.2

Source : OECD, Development Cooperation, 1978 Review.

of donor's aid programs going to LLDCs, reveal a similar aid figuration among DAC members. Although nearly all countries increased their share of ODA commitments to LLDCs, they are the same donors which rank on the top of the aid effort.

If one could argue that the concentration of donor's aid programs on low-income recipients and, especially on LLDCs, contains more elements of genuine development assistance, then the Scandinavian countries, Netherlands and Canada have become the best aid performers in terms of a combined impact of ODA/GNP ratio and share of ODA going to low-income countries. This argument certainly adds a new element to the discussion of the criteria used to select among possible recipients and consequently, to a better assessment of the genuine aid effort of the DAC countries.

b. Aid-tying Status

Another element which may indicate the willingness of donors to devote national resources to genuine development assistance is the tying status of their ODA disbursements. Table VII-13 shows, donor by donor, the share of untied aid in their ODA flows for the period 1975-1977. Tied aid includes all aid transactions for which procurement is limited to the donor country. The tying of aid is an act of self-interest designed to protect the donor's balance of payments, stimulate its private sector exports, and return a portion of aid to the donor via taxation. Aid is said to be untied when procurement may be undertaken in substantially all countries.

One could advance the argument that untied aid is more genuinely linked to the needs of the recipient countries and less directly connected to specific interests and needs of donors. This would imply that untied aid is more directly related to the general idea of donors' responsibility for genuine development assistance and, consequently, would come closer to the notion of an international public good.

Table VII-13 Comparative Performance of Untied Aid (1975-1977)

Countries	% of ODA	Rank
Australia	72.5	6
Austria	78.7	3
Belgium	31.0	16
Canada	46.6	10
Denmark	57.3	9
Finland	41.7	14
France	36.0	15
Germany	74.1	5
Italy	59.8	8
Japan	46.1	12
Netherlands	46.5	11
New Zealand	81.5	1
Norway	80.4	2
Sweden	76.0	4
Switzerland	65.2	7
United Kingdom	43.5	13
United States	29.1	17
Total DAC	45.3	

Source : OECD, Development Cooperation, 1976, 1977 and 1978 Review.

A test relating GNP and untied aid as a percentage of ODA showed a negative correlation coefficient of $r_s = -0.50$ at 0.05 level of significance for the period 1975-1977. This result may indicate a tendency for small countries to contribute relatively more untied aid to developing countries than large countries. We must wait for further research before this contrast with Olson's public good model can be confirmed.

Concentration of donor's development assistance on low-income countries and the status of aid-tying certainly add an interesting new element to the analysis of a donor's relative aid performance. Moreover, it qualifies the conclusions that Olson and Ruggie drew

from their hypotheses. It confirms the argument that the size of a donor does not play the determinant role Olson and Ruggie assumed in their models to explain the aid performance of the DAC donors. Other explanatory elements are to be taken into consideration.

c. A Composite Index of Aid Performance

A method to bring the 'quality' of aid into an assessment of the development efforts of donors is the construction of a composite index of aid performance. Various measures of aid performance could be selected to consolidate into a single index (1). Although the use of an index is always open to criticism, we tend to believe that an index of aid performance is a better approximation of the actual aid efforts of a donor.

We constructed an index of aid performance based on five criteria : 1) ODA as a percentage of GNP ($\times 100$) ; 2) percentage of ODA channelled through multilateral agencies ; 3) grants as a percentage of ODA ; 4) grant element to LLDCs as a percentage of ODA ; 5) percentage of ODA that is untied. Reasoning that ODA as a percentage of GNP remains a fundamental indicator of donor effort, we weighted this measure by a multiple of four before averaging it with the four other measures. Tables VII-14 and VII-15 represent this index of aid performance for the period 1975-1977 and for 1978. The Scandinavian countries and the Netherlands top the rankings, while Japan and the U.S. are found at the bottom of the ranking table.

A correlation of the composite index with GNP by means of Spearman's rank order method yields a coefficient of correlation of $r_s = -0.28$ for 1975-1977 and $r_s = -0.38$ for 1978. If population is taken as the measure of size, then correlation of aid performance with size tends to go in a stronger inverse direction ($r_s = -0.38$ for 1975-1977 ; and $r_s = -0.41$ for 1978). None of the correlations,

(1) A similar index of aid performance has been constructed by Hoadley, J.S., Small States as Aid Donors, International Organization, Vol. 34, Nr. 1, Winter 1980, p. 121-137.

however, reached statistical significance at the 0.05 level.

The only inference we may say at this moment is that Olson's and Ruggie's hypotheses are not validated for the 1970s and, that further research will be needed to analyze the specific relationship between size and aid performance. The composite index of aid performance certainly provides a better idea of the genuine development effort of donors. It even seems to imply that size does not influence the aid performance of donors as Olson's and Ruggie's models predict.

Table VII-14 Index of Aid Performance (1975-1977)

Donors	ODA as % of GNP (x 100)	ODA _m as % of ODA	Grant element as % of GNP	Grant element of ODA to LLDCs	% of ODA untied	Index of aid per- formance	Rank
Australia	48.6	16.3	100	100	72.5	60.4	6
Austria	18.2	28.0	86.5	78.5	78.7	43.1	14
Belgium	51.4	31.8	98.2	99.2	31.0	58.2	9
Canada	50.3	41.4	97.1	97.4	46.6	60.5	5
Denmark	58.2	44.7	96.6	91.7	57.3	65.4	4
Finland	18.0	44.0	93.3	90.9	41.7	42.5	15
France	61.1	14.7	91.7	93.2	36.0	60.0	7
Germany	32.3	17.5	87.0	92.6	74.1	50.0	11
Italy	11.1	71.0	98.3	100	59.8	46.7	12
Japan	21.3	32.0	71.8	77.1	46.1	39.0	17
Netherlands	81.0	32.3	90.4	95.1	46.5	73.5	3
New Zealand	44.1	21.0	98.8	100	81.5	59.7	8
Norway	73.6	46.5	100	100	80.4	77.7	2
Sweden	88.1	35.5	99.6	100	76.0	82.9	1
Switzerland	18.8	38.2	94.3	96.1	65.2	46.1	13
United Kingdom	37.4	34.8	97.0	97.4	43.5	52.8	10
United States	24.4	30.6	87.0	88.2	29.1	41.6	16

Source : OECD, Development Cooperation, 1976, 1977 and 1978 Review.

Table VII-15 Index of Aid Performance (1978)

Donors	ODA as % of GNP (x 100)	ODA _M as % of ODA	Grant element as % of ODA	Grant element of ODA to LLDCs	% of ODA untied	Index of aid per- formance	Rank
Australia	45	28.6	100	100	77.5	60.7	7
Austria	27	32.0	65.8	99	32.4	42.1	16
Belgium	55	42.1	98.6	99	49.9	63.7	5
Canada	52	38.8	96.0	100	49.6	61.5	6
Denmark	74	43.9	94.5	96.4	71.2	72.2	4
Finland	17	58.2	99	100	81.8	50.9	12
France	57	13.1	92.4	96.0	42.1	58.9	8
Germany	31	35.5	87.4	92.6	78.8	52.3	11
Italy	7	87.3	99.8	100	79.4	49.3	13
Japan	23	30.9	75.3	76.2	40.3	39.3	17
Netherlands	79	26.5	92.4	99.1	52.8	73.3	3
New Zealand	34	18.2	100	100	96.9	56.4	9
Norway	90	45.8	100	100	82.7	86.1	1
Sueden	90	39.6	99.9	100	87.8	85.9	2
Switzerland	20	41.8	93.1	100	63.4	47.3	14
United Kingdom	39	42.1	92.9	99.2	44.2	54.3	10
United States	23	38.7	89.5	92.1	41.9	44.3	15

Source : OECD, Development Cooperation, 1979 Review.

2. The Changing Relations with Developing Countries

A second group of possible reasons for the departure from the predicted outcomes of both Olson's and Ruggie's models, is related to the changing relations of individual donors with developing countries. The changing relations appear to have played a major role in the changing trend of the aid performance of DAC countries. Political commitments, on the one hand, resulted for a few donors in important bilateral aid flows during the 1960s which, subsequently, decreased. Economic progress, on the other hand, tended to make some developing countries normal commercial partners rather than recipients of aid. And also the long-term evolution of trade relations with the developing countries may have influenced the aid volume of a number of donors.

a. Political Commitments

When the ODA/GNP ratio reached its peak in the early 1960s, three donors (France, U.K., Belgium) were heavily engaged in a process of decolonization, and three other countries (Germany, Italy, Japan) were providing war reparation payments on a large scale. Subsequently, in the mid 1960s the American involvement in Vietnam was accompanied by massive transfers of concessional assistance to that country. These factors contributed significantly to the high level of aid in the sixties and their diminishing importance accounts for a large part of the decline of the DAC ODA/GNP over the period.

Aid to newly independent countries by the former metropolitan countries took an important share of overall aid. Table VII-16 shows that the grants extended in 1962 by Belgium, France and the U.K. to their former dependencies amounted to 0.08 per cent of DAC GNP. In 1976 these three donors' ODA to the same individual recipients amounted to only 0.03 per cent of DAC GNP.

Table VII-16 Aid to Former Dependencies
(Net Disbursements - Percentage of
donor's GNP)

	1962	1976
Belgium to Zaire, Rwanda, Burundi for reference ODA/GNP	0.45 0.57	0.22 0.51
France to former French dependencies for reference ODA/GNP	0.84 1.26	0.19 0.62
United Kingdom to independent Common- wealth LDCs for reference ODA/GNP	0.18 0.52	0.14 0.38
Total (in % of DAC GNP) for reference ODA/GNP	0.08 0.52	0.03 0.33

Source : OECD, Development Cooperation, 1978 Review,

The effort in connection with this process of decolonization influenced considerably their aid volume performance. While total ODA from France declined from 1.26 per cent of GNP to 0.62 per cent between 1962 and 1976, French aid to recipients other than North Africa and other former dependencies remained stable on a level of 0.43 per cent of GNP. Belgian aid to recipients other than Zaire, Rwanda and Burundi increased considerably during this period (from 0.09 per cent in 1962 to 0.29 per cent in 1976), while total Belgian aid decreased to 0.51 per cent. The ODA made available in recent years in connection with decolonization, to Papua New Guinea by Australia and to Surinam by the Netherlands, for instance, still involved amounts that were large for the recipients, but not in comparison with DAC GNP. Table VII-17 indicates that, to a large degree, the geographic distribution of the bilateral aid flows of the former colonial powers still reflects historical longstanding associations.

Table VII-17 Geographic Distribution of Bilateral Aid Flows of Former Colonial Powers (1965, 1971, 1977)

	Percentage of total ODA _B		
	1965	1971	1977
Australia to Papua New Guinea	70	69	56
Belgium to Zaire, Rwanda, Burundi	91	72	60
France to former French colonies	92	83.5	..
Netherlands to Surinam, Dutch Antilles	43	30	24
United Kingdom to Commonwealth countries	90	71	66

Source : OECD, Development Cooperation, Annual Aid Reviews.

War reparation payments of Germany, Italy and Japan still constituted an important share of their ODA in the early sixties. In 1963 reparation payments constituted 18 per cent of Germany's ODA, 11 per cent of Italy's ODA and 49 per cent of Japan's ODA.

The ODA volume performance of Germany and Italy has been very significantly affected by the impact of the reparation payments on their aid figures. German ODA disbursements other than reparation payments averaged 0.34 per cent during the period 1963-1965, about the same figure for the period 1975-1977 when reparation payments were no longer paid. In the case of Japan, ODA other than reparation payments averaged 0.09 per cent of GNP in 1963-1965, i.e., below half of the 1975-1977 level (Table VII-18).

Table VII-18 Reparation Payments

	Germany		Italy		Japan	
	\$ m	% of GNP	\$ m	% of GNP	\$ m	% of GNP
1963	70	0.07	8	0.02	68	0.10
1964	63	0.06	6	0.01	63	0.08
1965	75	0.07	3	x	75	0.08

Source : OECD, Development Cooperation, 1978 Review, p. 127.

The American massive economic aid to Vietnam reached a peak of about 0.07 per cent of U.S. GNP in 1966, or 0.04 per cent of DAC GNP (in 1966 ODA/GNP of DAC was 0.41 per cent). It was down to half this percentage in the early 1970s, and has been completely nil since 1975. In other words, American aid to Vietnam constituted a relatively large share of DAC aid flows in the mid 1960s.

b. Economic Progress of some Developing Countries

Apart from these political commitments which influenced the aid performance of some donor countries, the improvement in the economic situation of a number of developing countries may have affected the aid performance of some DAC members. Significant declines were recorded in the GNP percentage of aid flows to some groups of recipients. Firstly, OPEC countries, which in 1960 received 0.06 per cent of DAC GNP, received only 0.01 per cent in 1976. Instead they became an important donor group themselves. Table VII-18 only serves to exemplify this trend. Secondly, European developing countries received development assistance from DAC countries amounting to 0.04 per cent of DAC GNP in 1960 ; the corresponding figure for 1976 was 0.01 per cent. Thirdly, a similar trend can be observed for some other countries which were major

aid recipients but have now become partners on commercial terms (e.g., Brazil, Korea, and Taiwan). The decline of DAC ODA extended to these countries has not been offset by additional aid by DAC donors to the poorer recipient countries.

Table VII-19 Net Disbursements of Concessional Assistance by OPEC Members (a)

	1970	1975-1977
In \$ million for reference DAC	357 6,786.5	5,614.7 14,695.7
In % of GNP for reference DAC	0.43 0.34	2.33 0.33

(a) OPEC members are Algeria, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, UAE, Venezuela.

Source : OECD, Development Cooperation, 1978 Review.

c. The Relationship between Trade and Aid Volume

Another possible reason for the changing relations with developing countries is the growing importance attached to the relationship between trade and aid volume. The exports of the DAC countries to the developing countries as a percentage of DAC GNP rose from 2.10 per cent in 1963 to nearly 4.0 per cent in 1977 (Table VII-20). Still, considerable differences exist among DAC countries as regards the share of exports going to developing countries.

Table VII-20 DAC Countries^a Exports to LDCs
(Percentage of DAC GNP)

1963	2.10	1971	2.38
1964	2.27	1972	2.39
1965	2.31	1973	2.71
1966	2.30	1974	3.65
1967	2.21	1975	3.88
1968	2.25	1976	3.81
1969	2.31	1977	3.99
1970	2.34		

a. Excluding Australia, Finland and New Zealand

Source : OECD, Development Cooperation, 1978 Review,
p. 130.

If trade interests are important to a donor's foreign policy, one should expect a positive relation between the share of LDCs in the donor's exports and the donor's aid volume. This relation was tested for two different periods. For the period 1964-1966, we found a significant positive correlation between the share of LDCs in donor's exports and the ODA/GNP ratio ($r_s = 0.72$). The same set of variables was tested for the period 1975-1977 and the correlation coefficient between the two sets of variables proved to be not significant ($r_s = -0.04$). These diverging outcomes make us believe that, *ceteris paribus*, for the latter period the importance of the share of LDCs in a donor's exports does not seem to have had a decisive influence on the aid performance of a donor's country (Table VII-21).

Table VII-21 Share of LDCs in Donor's Exports
Compared with Donor's ODA
(1964-1966, 1975-1977)

Countries	1964 - 1966				1975 - 1977			
	Share of LDCs in Exports (%)	Rank	ODA as % of GNP	Rank	Share of LDCs in Exports (%)	Rank	ODA as % of GNP	Rank
Australia	16.9	7	0.51	2	14.67	3	0.49	8
Austria	2.17	17	0.10	14	2.28	17	0.18	15
Belgium	13.15	9	0.49	5	5.87	10	0.51	6
Canada	9.28	12	0.23	9	5.23	12	0.50	7
Denmark	8.68	13	0.14	13	5.28	11	0.58	5
Finland	6.44	15	0.03	17	3.93	16	0.18	16
France	25.77	4	0.78	1	7.92	9	0.61	4
Germany	16.38	8	0.39	6	8.82	7	0.32	11
Italy	24.74	5	0.10	15	8.54	8	0.11	17
Japan	42.7	1	0.23	8	20.02	2	0.21	13
Netherlands	19.1	6	0.36	7	10.36	6	0.81	2
New Zealand	9.87	11	0.19	11	11.71	4	0.44	9
Norway	8	14	0.16	12	4.62	15	0.74	3
Sweden	9.98	10	0.20	10	4.97	14	0.88	1
Switzerland	4.9	16	0.08	16	5.20	13	0.19	14
United Kingdom	29.39	3	0.49	4	10.99	5	0.37	10
United States	31.7	2	0.50	3	23.7	1	0.24	12

Source : OECD, Overall Trade by Countries.

What is more, if we compare the DAC countries' share of LDCs in their exports in 1964 with the overall change in the ODA/GNP ratio over the period 1964-1977, the correlation coefficient between the two sets of variables is $r_s = -0.59$ at a 0.05 significance level (Table VII-22). This result would give the surprising implication that the best ODA volume performers tend to be among those countries which direct a comparatively small share of their exports to developing countries. Their relatively limited trade involvement with developing countries may have made it easier for

some countries to obtain aid appropriations, even though their ODA programmes were clearly not geared towards export promotion and not necessarily oriented towards their best potential market countries. It certainly implies that the relationship between trade and aid volume does not provide us with a readily accepted reason for the changing trend in the aid performance of DAC countries. It may explain in part but not justify the decline of the DAC ODA/GNP ratio since the early 1960s.

Table VII-22 Share of LDCs in Donor's Exports
Compared with a Change in Donor's
Volume Performance

Countries	1964 share of LDCs in Exports (%)	1964 - 1977 change in ODA / GNP ratio (in points)
Japan	41.3	+ 0.06
United States	34.4	- 0.34
United Kingdom	29.7	- 0.16
France	26.9	- 0.29
Italy	22.7	+ 0.01
Netherlands	19.8	+ 0.56
Australia	17.4	- 0.03
Germany	16.8	- 0.17
Belgium	12.9	- 0.01
New Zealand	11.	+ 0.20
Sweden	10.2	+ 0.82
Canada	10.2	+ 0.34
Denmark	8.9	+ 0.49
Norway	8.4	+ 0.67
Finland	7.1	+ 0.13
Switzerland	4.5	+ 0.12
Austria	2.1	+ 0.16

Source : OECD, Overall Trade by Countries.

Conclusion

These qualitative reasons, some of political nature, others of more economic nature, may well explain the interference of elements other than the size of the donor country in the analysis of the aid performance of donors. In the early sixties the combined impact of political and economic interests seemed to concentrate on some particular donors who happen to be the major donors.

The concentration of development assistance on bilateral aid flows for, political and economic reasons, blurs the result Olson predicted in his public good analysis and consequently must make us very careful in applying this analysis to the foreign aid sector. To what extent can one maintain that foreign aid is called an international public good, i.e., a donor country makes no distinction between its own foreign aid spending and that of other donors, without risking the danger of talking about a mere abstract public good box? Benefits from aid expenditures to developing countries do not seem to be equally shared among the industrial countries. On the contrary, actual benefits appeared to be rather divisible. Henceforth, the positive correlation coefficient between GNP and the ODA/GNP ratio in the 1960s was probably not so much the result of the implication that large countries were assuming a bigger share of the common burden of promoting world security - as Olson proposed in his theory of alliances -, but was mainly the result of the contributions of a few major donors pursuing their national interests.

Most of the other donors, which did not have specific economic and political interests to pursue, spent very little on development assistance in the 1960s. Their scanty resources devoted to foreign aid were primarily channelled through multilateral agencies. For these countries, in particular the Scandinavian countries, foreign aid was primarily given for altruistic motives. They perceived that the genuine development task could, at that moment, best be achieved through multilateral assistance.

In the case of defence spending, it might be true that small countries benefiting from the expenditures of large countries whatever they do, spend very little themselves. Equity of preferences for the good itself and for the way it should be produced, is assumed. This might be a reasonable assumption for the production of the alliance good of security. Development assistance, however, is a task to which relatively very little money is appropriated by the budget. Moreover, diverging interests as regards the task of development assistance are more readily visible and the benefits derived from the aid disbursements are often divisible. Summarizing, the various preferences of donor countries introduce some important additional elements in the analysis of the foreign aid sector of which the public good application makes abstraction.

3. The Impact of Large Donors

Another aspect that we bring into the assessment of the development assistance of donors is related to the changing aid performance of some DAC countries. The DAC aggregate figures, as regards the volume aid performance as well as the relation between multilateral and bilateral development assistance, have been heavily influenced by a few large donors. In 1963-1965 the flows from the U.S., France and the U.K. amounted to nearly three-fourths of DAC ODA. In 1975-1977 their aid disbursements dropped to just over half of the total DAC ODA. Moreover, their combined ODA, which amounted to 0.57 per cent of their GNP in 1963-1965, fell subsequently to a low 0.31 per cent. Germany and, more strikingly, Japan, have taken a progressively larger share in DAC ODA but their ODA/GNP ratio declined or stagnated over the years. Also the evolution of donors' ODA as a percentage of DAC ODA and its change at real prices during the 1970s proves the relatively poor aid performance of the biggest donors (Table VII-23).

The remaining twelve countries as a group show clearly the best ODA performance in share of total DAC ODA as well as in proportion of GNP. Their share of total DAC ODA has grown from 23 per cent in 1963-1965 to nearly 30 per cent in 1975-1977. Their ODA/GNP ratio increased significantly from 0.23 per cent to 0.45 per cent (with considerable differences, admittedly, between individual countries in this group).

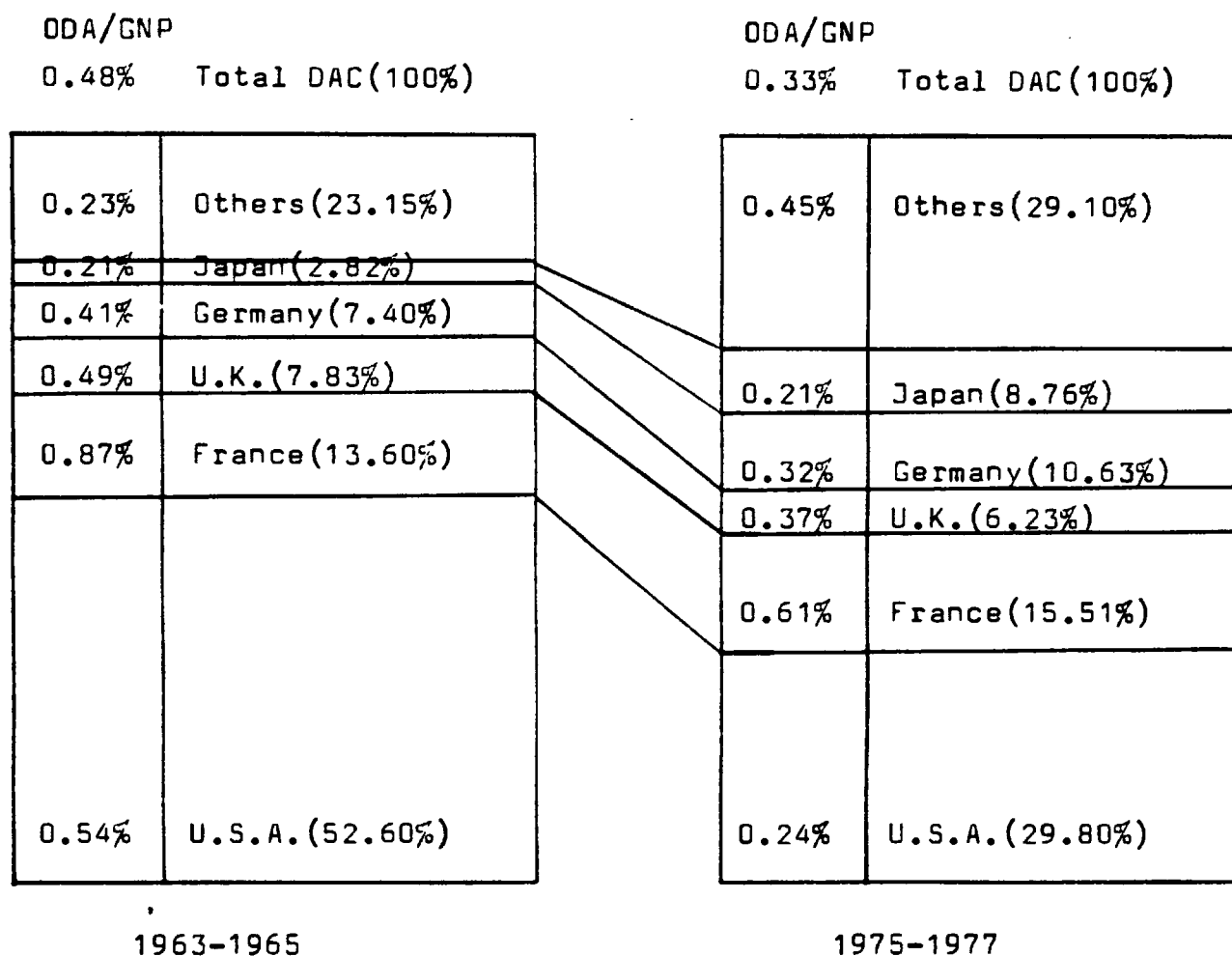
Table VII-23 Evolution of ODA within DAC ODA
(1970-1977)

	ODA as % of DAC ODA		Increase in ODA at real prices from 1970 till 1977
	1970	1977	
Principal donors in 1970			
United States	44.9	28.3	- 22.9
France	14.3	15.4	+ 9.0
Germany	8.8	9.4	+ 7.7
Japan	6.7	9.7	+ 50.9
United Kingdom	6.6	6.2	- 0.6
Sub-total	81.3	69.1	- 9.7
Other DAC donors			
Canada	5.1	6.75	+ 67.4
Australia	3.0	2.9	+ 2.4
Netherlands	2.9	6.1	+ 104.4
Italy	2.2	1.3	- 33.0
Belgium	1.8	2.5	+ 31.5
Sweden	1.7	5.3	+ 193.8
Denmark	0.9	1.7	+ 107.8
Norway	0.5	2.0	+ 260.8
Switzerland	0.4	0.8	+ 66.8
New Zealand	0.2	0.4	+ 87.6
Austria	0.2	0.8	+ 408.4
Finland	0.1	0.3	+ 217.6
Sub-total	19.7	30.9	+ 80.4
DAC Total	100.0	100.0	+ 8.8

Source : OECD, Development Cooperation, Annual Aid Reviews.

Figure VII-2 brings us to the changing shares of major donors in DAC ODA between the periods 1963-1965 and 1975-1977. Clearly indicated is the fact that the overall official development assistance by DAC countries is heavily weighted by the individual U.S. performance.

Figure VII-2 Share of Major Donors in DAC ODA
(1963-1965 and 1975-1977)



Source : OECD, Development Cooperation, Annual Aid Reviews

Recent trends in the U.S. aid effort leave much to be desired. Although it is obvious that the U.S. has remained the largest single donor with a net disbursement of \$4,166.67 million in 1975-1977, its aid performance record is quite disappointing, both absolutely and as a fraction of GNP. The monetary increase of its aid disbursements is more than offset by price erosion. And as percentage of GNP the U.S. aid disbursements have stabilized around a

low level of 0.24 per cent compared with an average of 0.54 per cent in 1963-1965.

Table VII-24 compares the relative aid shares of the DAC members with the relative GNP. The American share in total DAC GNP amounted to over half of DAC GNP in 1963-1965. Its contribution to DAC ODA amounted to 60 per cent. According to this comparison of relative shares the U.S. contributes a disproportionate part of the realization of the DAC development assistance. It is plausible to argue that the undisputed American leadership in the early 1960s did have its positive effects on the total aid performance of DAC. Only the relative aid shares of three other countries, i.e., Belgium, France and U.K. exceed their relative shares of DAC GNP. If we take this comparison of relative shares as a criterion for the disproportionate

Table VII-24 Relative DAC Aid Shares Compared to Relative GNP

Countries	1963 - 1965			1975 - 1977		
	GNP as % of DAC GNP		Aid as % of DAC Aid	GNP as % of DAC GNP		Aid as % of DAC Aid
Australia	1.68	<	1.78	2.14	<	3.14
Austria	0.71	>	0.12	0.99	>	0.55
Belgium	1.26	<	1.43	1.67	<	2.60
Canada	3.81	>	1.36	4.31	<	6.57
Denmark	0.73	>	0.18	0.92	<	1.61
Finland	0.64	>	0.04	0.66	>	0.35
France	7.46	<	13.62	8.39	<	15.5
Germany	8.58	>	7.40	10.86	>	10.63
Italy	4.43	>	1.01	4.23	>	1.42
Japan	6.43	>	2.82	13.61	>	8.76
Netherlands	1.38	>	0.87	2.16	<	5.30
New Zealand	0.39	>	0.15	0.31	<	0.41
Norway	0.52	>	0.17	0.75	<	1.66
Sueden	1.52	>	0.53	1.74	<	4.66
Switzerland	1.04	>	0.15	1.40	>	0.80
United Kingdom	7.61	<	7.83	5.50	<	6.23
United States	52.56	<	60.03	40.37	>	29.80

Source : OECD, Development Cooperation, Annual Aid Reviews.

burden sharing of foreign aid, then all the other DAC members did not pay their fair share of the aid burden in 1963-1965. It certainly proves - from a different angle - the relevance of the specific political and economic interests which determined the aid performance of these four 'benevolent' donors in the mid 1960s.

The situation has been completely reversed in the 1970s. The American share in DAC GNP dropped to 40 per cent ; its corresponding share in total DAC aid was more than halved to less than 30 per cent. In 1975-1977 the U.S. contributed less than the amount one should expect it to pay according to its relative GNP share. Most countries, however, showed significant increases of their aid contributions as regards their DAC share as well as their ODA/GNP ratio. According to this comparison of relative shares, the U.S., Austria, Finland, Germany, Italy, Japan and Switzerland are benefiting disproportionately from the pursuit of the development task of the total DAC.

Within this declining trend of total ODA it is also useful to consider the distinction between bilateral and multilateral development assistance (Table VII-25). In 1963-1965 the U.S. provided more than half (i.e., 57.6 per cent) of total bilateral ODA. This percentage dropped to just over 20 per cent in 1975-1977. American ODA_B as a percentage of GNP dropped drastically from 0.52 per cent to a near 0.17 per cent (See Table VII-3). On the other hand, the U.S. increased its share in multilateral ODA from 2.5 per cent to 9 per cent, with a corresponding increase of ODA_M as a percentage of GNP from 0.02 per cent to 0.07 per cent.

The effect of the sharp decline of U.S. ODA_B on DAC ODA_B could not be offset by the increased shares of ODA_B relative to total DAC ODA_B of nearly all other donors. The increased importance of multilateral ODA, on the other hand, found a wide response in the increased shares of ODA_M of all 17 DAC members.

Table VII-25 Relative Shares of ODA_B and ODA_M Compared to Relative ODA

Countries	1963 - 1965		1975 - 1977	
	ODA _B as % of DAC ODA	ODA _M as % of DAC ODA	ODA _B as % of DAC ODA	ODA _M as % of DAC ODA
Australia	1.59	0.19	2.63	0.51
Austria	0.09	0.03	0.40	0.15
Belgium	1.28	0.15	1.77	0.82
Canada	1.03	0.33	3.85	2.72
Danmark	0.04	0.14	0.89	0.72
Finland	0.004	0.04	0.20	0.12
France	13.19	0.43	13.23	2.27
Germany	6.88	0.52	7.70	2.92
Italy	0.75	0.25	0.41	1.01
Japan	2.61	0.21	5.97	2.80
Netherlands	0.56	0.33	3.59	1.71
New Zealand	0.13	0.02	0.32	0.09
Norway	0.05	0.12	0.89	0.77
Sweden	0.21	0.32	3.00	1.65
Switzerland	0.09	0.06	0.49	0.30
United Kingdom	7.02	0.81	4.06	2.17
United States	57.57	2.46	20.68	9.12
Total DAC	93.64	6.36	70.10	29.90

Source : OECD, Development Cooperation, Annual Aid Reviews.

Some tentative conclusions may be drawn : 1) the pursuit of the task of development assistance by the DAC, i.e., the aid volume performance and the division over bilateral and multilateral aid flows, has been changing with the decreasing importance of the dominant participant ; 2) the disproportionate burden sharing of the development assistance among the DAC members according to the size of the donor is no longer a significant element in the explanation of the aid effort of the DAC members ; 3) over the years there has been a trend to provide a greater share of development assistance through multilateral aid channels for all individual DAC members.

4. The Aid-giving Capacity

A final explanation for the diversion from the results expected from Olson's and Ruggie's hypotheses is linked to the idea that the aid performance of a donor is a function of the aid-giving capacity rather than size. It would be reasonable to assume that DAC members mention their economic situation as an important factor which determines the volume of their ODA. One could advance the argument of a positive relationship between the aid volume of a donor and such factors as growth and wealth in the donor country. A relationship between the aid-giving capacity and the aid performance would then be linked to the idea that development aid is a superior good. In the following, we will explore this relationship.

a. Aid and GNP Growth

The decline of the DAC ODA/GNP ratio during the period of sustained economic growth that lasted until 1973 and its temporary recovery in 1974 and 1975, at a time of slightly declining real GNP, may appear paradoxical at first sight. In fact, the period 1963-1973 was not a period of decline but of progression of ODA/GNP ratios for most of the 17 DAC countries. As noted earlier, the DAC average was heavily influenced by the performance of a few large donors and, especially, by the disappointing aid effort of the U.S.

The ODA volume seems to be unrelated to the donor's actual or expected changes in GNP. Individual countries' records over the period 1960-1977 do not show the positive relationship between GNP growth and the change in the ODA/GNP ratio which could be expected if one assumes that the growth of GNP increases aid-giving capacity (Table VII-26). The correlation coefficient between the average yearly growth rate of real GNP and overall change in the ODA/GNP ratio for the period 1960-1977 is not significant ($r_s = -0.04$). Countries like Japan and France with high growth rates decreased, in fact, their ODA/GNP ratio whereas countries like Sweden and

Denmark with relatively low growth rates did significantly increase their ODA/GNP ratio. Although the size of a donor country does not seem to explain donors' aid performance, as suggested by Olson's and Ruggie's hypotheses, neither does the relationship between aid volume and the GNP growth of donor provide a possible explanation for the changed attitude of donors towards the task of development assistance.

Table VII-26 Growth of GNP and ODA Volume
Average Yearly Growth Rate of Real GNP
and Overall Change in the ODA/GNP Ratio
(1960-1977)

	GNP	ODA		GNP	ODA
Japan	8.9	-0.03	Belgium	4.3	-0.42
France	5.0	-0.75	Germany	4.2	-0.04
Norway	4.8	+0.71	Denmark	3.8	+0.51
Canada	4.8	+0.32	Sweden	3.6	+0.94
Netherlands	4.7	+0.54	United States	3.3	-0.31
Austria	4.6	+0.24	New Zealand	3.2	+0.18 ^b
Finland	4.5	+0.10 ^a	Switzerland	3.2	+0.15
Italy	4.4	-0.12	United Kingdom	2.0	-0.18
Australia	4.3	+0.08	Total DAC	4.2	-0.20

a. Since 1970

b. Since 1966

Source : OECD, Development Cooperation, 1978 Review, p. 133.

b. Aid and GNP per capita

The same principle would seem to imply that, as a country grows richer over time, it should be able to devote a higher percentage of its GNP to aid. In the last years this tendency has found expression in ranking tables comparing the relative positions of DAC members in respect of GNP per head with their relative positions concerning aid flows percentages and ODA per head. Eventually it appears that the aid volume has tended to become generally higher in the comparatively better-off countries. The argument would then read as follows : it is reasonable to assume that the

higher a country's GNP per capita, the greater the percentage of that GNP which it can devote to development assistance, and the higher its ODA per head.

This argument clearly contrasts with Olson's hypothesis. In the 'Economic Theory of Alliances', Olson proved that there was no statistically significant relationship between per capita GNP and the defence budget. He concluded that the correlation between the size of an ally's national income and the percentage of its national income spent on defence, could not be explained in terms of any relationship of these two variables with per capita income.

For the task of development aid Olson's statement seems less convincing. We have tested the above assumptions for the relationship between GNP per capita and ODA/GNP ratio and also for the relationship between GNP per capita and ODA per head (Table VII-27 and VII-28).

Table VII-27 Comparative Aid-giving Performance (1963-1965)

Country	GNP per capita		ODA		ODA per head	
	\$	Rank	% of GNP	Rank	\$	Rank
United States	3.369	1	0.545	2	18.39	1
Sweden	2.436	2	0.167	11	4.08	9
Canada	2.424	3	0.17	10	4.12	8
Switzerland	2.180	4	0.071	16	1.55	13
Danmark	1.915	5	0.117	13	2.24	11
France	1.899	6	0.872	1	16.57	2
Australia	1.859	7	0.507	4	9.42	3
Germany	1.809	8	0.412	6	7.45	6
United Kingdom	1.731	9	0.492	5	8.51	5
Norway	1.724	10	0.161	12	2.78	10
Belgium	1.452	11	0.543	3	8.98	4
Netherlands	1.400	12	0.307	7	4.30	7
Austria	1.211	13	0.082	15	1.00	15
Italy	1.055	14	0.109	14	1.15	14
Japan	816	15	0.21	8	1.71	12
Ranks :						
GNP / capita		1	2	3	4	5 6 7 8 9 10 11 12 13 14 15
ODA as % of GNP		2	11	10	16	13 1 4 6 5 12 3 7 15 14 8
ODA per head		1	9	8	13	11 2 3 6 5 10 4 7 15 14 12

Source : OECD, Development Cooperation, Annual Aid Reviews.

Table VII-28 Comparative Aid-giving Performance (1975-1977)

Country	GNP per capita		ODA		ODA per head	
	\$	Rank	% of GNP	Rank	\$	Rank
Switzerland	9.144	1	0.188	14	17.55	12
Sweden	8.985	2	0.881	1	79.17	1
United States	7.936	3	0.244	12	19.36	10
Canada	7.899	4	0.503	7	39.80	6
Norway	7.847	5	0.736	3	57.71	2
Denmark	7.650	6	0.562	5	44.51	4
Germany	7.464	7	0.323	11	24.13	9
Belgium	7.184	8	0.514	6	36.97	7
France	6.705	9	0.611	4	40.98	5
Netherlands	6.644	10	0.810	2	53.87	3
Australia	6.493	11	0.486	8	31.57	8
Finland	5.897	12	0.176	16	10.41	16
Austria	5.602	13	0.182	15	10.21	15
Japan	5.104	14	0.213	13	10.87	14
New Zealand	4.166	15	0.441	9	18.38	11
United Kingdom	4.157	16	0.374	10	15.55	13
Italy	3.186	17	0.111	17	3.53	17

Ranks :																	
GNP / capita	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ODA as % of GNP	14	1	12	7	3	5	11	6	4	2	8	16	15	13	9	10	17
ODA per head	12	1	10	6	2	4	9	7	5	3	8	16	15	14	11	13	17

Source : OECD, Development Cooperation, Annual Aid Reviews.

Table VII-29 summarizes the trend of the rank correlation coefficients for the period 1963-1977. The rank correlation coefficient between ODA/GNP ratios for individual DAC countries and their GNP per capita in 1963-1965 amounted to a not significant $r_s = 0.17$. For the period 1975-1977 the test gave a correlation coefficient of $r_s = 0.42$. If we exclude Switzerland from the test, we will arrive at a statistically relevant positive correlation between GNP per capita and ODA/GNP ratio, i.e., $r_s = 0.55$.

More indicative for a possible importance of the aid-giving capacity of a donor to assess its aid effort, is the relationship between GNP per capita and ODA per head. This hypothesis was tested for the period 1963-1977 and was found valid from the period 1966-1968 on. If we exclude Switzerland from the test - Switzerland is contributing very little ODA compared to its wealth - an even more positive relationship will be found between these two sets of variables. For the period 1975-1977 the correlation coefficient was $r_s = 0.62$ and even $r_s = 0.72$ without Switzerland.

Table VII-29 Aid-giving Capacity Correlations

	1963-1965	1966-1968	1969-1971	1972-1974	1975-1977
GNP per capita - ODA/GNP	0.14	0.22	0.42	0.25	0.42 (0.55) ^a
GNP per capita - ODA per head	0.41 (0.45) ^a	0.59 (0.65) ^a	0.70 (0.76) ^a	0.52 (0.60) ^a	0.62 (0.72) ^a

a. Without Switzerland

Although the relationship between the wealth of a nation expressed in terms of GNP per capita and the aid effort of a nation does not show the expected satisfying results for both tested sets of variables, it still may indicate a possible element of explanation for the changed aid performance of DAC countries. The most reasonable inference at the moment is that a tendency has been developing whereby the more wealthy donors are contributing more to development assistance. Further research must be undertaken to see if this tendency will continue to develop.

Conclusion

In the final chapter we have tried to assess the aid performance of the DAC donors on the basis of Olson's public good model and Ruggie's international cooperation model, both rooted in the setting of the Rational Actor Approach. The first section dealt with a discussion of the nature of the international good of development aid. It became clear that defining development aid as a mere international public good, exhibiting non-rivalness and non-excludability, is very unrealistic. The least we could say is that development aid is an international good containing simultaneously public and private good elements.

The assumption of equal preferences for the task of development aid makes abstraction from the diverging interests donors have in foreign aid. One may easily agree with the assertion that there is a common international interest in the economic and social development of the Third World generally. However, this common interest in development aid is very much linked to the pursuit of national interests that only aims at realizing national private benefits. In other words, the public good nature of development aid becomes compromised by the national benefits drawn from specific aid contributions. It implies that Olson's public good model, as to its application in the area of development cooperation, runs into some difficulties. To put it in another way : the mixed nature of the international good of development aid makes the application of such an approach less promising.

In a second section we tested Olson's public good model and Ruggie's international cooperation model in the area of development cooperation. The hypotheses were tested for the aid performance of DAC for the period 1963-1977.

Olson's hypothesis, i.e., there is a significant positive correlation between the size of national income and foreign aid expenditures as a percentage of national income, is based on a public good argument. It predicts that small countries contribute disproportionately to the burden of development assistance than

large countries. The empirical testing resulted in a decreasing relevance of this hypothesis for the beginning of the period and a not significant correlation between the two sets of variables for the 1970s. In short, the disproportionate burden sharing of development assistance among DAC members according to the size of a donor was not confirmed by the results in the 1970s.

Ruggie's hypothesis, i.e., there is an inverse relationship between the ratio of multilateral/bilateral assistance and the total level of national resources, is based on an economics of scale argument. It predicts that small countries spend relatively more on multilateral development assistance than on bilateral assistance, when compared to large countries. The empirical testing confirmed this hypothesis for nearly the whole period, though with a declining trend. However, no statistically significant outcome was achieved for the period 1975-1977. Briefly, Ruggie's hypothesis did not prove its validity for the later period of the 1970s.

The not entirely satisfactory results of the empirical testing of both models seem to imply that the size of a country is less an explanatory element in determining the actual aid performance of DAC countries in the 1970s than it was assumed by both models. Therefore, in the final section, we explored some possible reasons for the departure from the predicted outcomes of both Olson's and Ruggie's models. We introduced some additional explanatory elements which, we believe, would have to be included in an analysis of the aid performance of the DAC members.

This discussion about the relevance of genuine development assistance has made us aware of the complexity of the nature of the international good of development aid. Concentration of aid flows on low-income recipients and the aid-tying status are indicators of a genuine aid effort. The introduction of these elements seemed to imply that size is less a determining factor of aid efforts than the economic models we employed predict.

A second explanatory qualification of the changing trend of the aid performance of DAC donors is linked to the changing relations of donors with developing countries. These relations,

some of political nature, others of more economic nature, may well explain the interference of elements other than the size of the donor country in the aid performance of donors. The public good model of Olson has made abstraction of the existence of various preferences of donor countries for development aid.

Thirdly we discussed the impact of some large donors on the DAC aid performance. It is plausible to argue that the undisputed American leadership in the early 1960s had its positive effects on the total aid performance of DAC. With the decreasing importance of the dominant participant, the aid volume performance and the division over bilateral and multilateral aid flows have been changing, refuting the predicted outcomes of the models.

A final explanation is linked to the idea that the aid performance of a donor is a function of the aid-giving capacity rather than size. It appears that there is a tendency for wealthier donors to contribute more to development assistance. We will have to wait for further research to see if this tendency will be confirmed.

The introduction of these qualifying aspects of explanation of the relative aid performance of DAC members has certainly blurred the neat and simple models from which Olson and Ruggie abstracted their hypotheses. However, the actual importance of specific interests of donors, of the decreasing role of the U.S. in providing development assistance, of the wealth of donors and of the selection of recipients according to genuine development assistance criteria has, in fact, affected the relative aid effort of DAC countries. We ended up with a more complex, but also with a more appropriate picture of the aid performance of DAC members for the period 1963-1977. The re-assessment of the aid performance of DAC countries lends credence to the presumption that the association of size of donors with the foreign aid behaviour is a more complex relation than Olson's and Ruggie's models seem to assume.

CONCLUSION

The assessment of the applicability of the Rational Actor Approach to International Relations has been central to this study. With this our research is linked to the attempts to stimulate scientific analysis in International Relations. We adopted the neo-classical research program as the conceptual structure for the analysis. Because of the growing importance of the public choice theory to the explanation of non-economic processes, we tried to interpret the behaviour of states towards international cooperation from a public goods perspective. In particular, we took Olson's theory of collective action as the main point of departure. Within this framework of reasoning the size of a country has proved to be an important explanatory source of foreign policy behaviour.

The use of the Rational Actor Model and a public goods perspective to the analysis of the behaviour of states towards international cooperation now calls for some general conclusions. The qualifications we proposed to Olson's original contribution have been commented at length in the theoretical parts of this study.

A chief point in Olson's theory of collective action is the relationship between an international organization and the nature of its output. The fact that public goods are presumably inherent in organizational or group efforts to attain a common objective appeared to have a special importance in the international context. However, Olson's conclusion that international organizations, international cooperation, and military alliances, whether tacit or formal, produce public goods, has clearly overstated the relationship between public goods and international organizations.

Reference was made to goods other than public goods, since the production and consumption of goods of all kinds are intimately interrelated in international cooperation. In short, international organizations also provide benefits that are private between the member countries. The existence of these private benefits is a significant element in explaining the behaviour of states towards international cooperation and must be included in any formal analysis. Too often focus was exclusively on the pure public benefits of organizations, hereby ignoring important private and pure benefits. This has led to misguided inferences.

We tried to remedy this by broadening the discussion. We have looked at the international dimension of goods which are provided through international cooperation. Finally, we arrived at a fourfold classification of international goods, i.e., public goods, commons goods, club goods and private goods. The specific nature of the various categories of international goods was believed to have some specific implications on the actual behaviour of the individual states towards international cooperation. We concluded that from a conceptual viewpoint a public goods perspective can be useful if we take into consideration that international arrangements may provide simultaneously goods with differing characteristics, public good elements as well as private good elements, and that international arrangements may be dealt with in differing frameworks of cooperation.

As well as commenting the relevance of the public good concept to International Relations we also tried to complement Olson's theory of collective action. This was done by including Ruggie's joint production scheme into the analysis. The choice of a combination of two goods, i.e., national arrangements and international arrangements, in the pursuit of a state's objective, was examined. Discussion was centered on the different impact of the returns to scale in the production of both national and inter-

national arrangements on states. According to this model the size of a country is instrumental in determining the composition of national and international arrangements to achieve a country's objective. The smaller a country, the more it will devote its resources to international arrangements to achieve its objective.

To resume our comments on the relationship between international organization and its output, two elements attracted our special attention. First, international arrangements provide simultaneously goods exhibiting different characteristics. Secondly, countries face a choice between national and international arrangements in the pursuit of their objectives. These two elements have an impact on the behaviour of states towards international cooperation.

Besides these more conceptual remarks on the application of Olson's public goods theory to International Relations, we also contested one of Olson's major conclusions, i.e., the exploitation hypothesis. It tells that large countries are exploited by small ones with regard to the cost-benefit ratio of public goods. The policy application of this theory is that small countries need not to cooperate with large ones about the provision of public goods. We pointed out some of the applications of this theory to International Relations.

However, with the help of the reaction process, we argued that the introduction of different preferences for the consumption of a public good could modify Olson's exploitation thesis. We showed that Olson's ideas about burden-sharing are not completely accurate. He makes the simplifying assumption that tastes are homogeneous throughout the organization or the arrangement affected by public goods. Yet, we believe that preferences play a critical role in determining the actual provision of public goods (cfr. Chapter V_A). Under certain conditions the income effects of a public good reverse the disproportionality of the

burden-sharing, i.e., the country with the relatively smaller output prior to the reaction process may bear a disproportionately larger share of the public good's costs after the process. Thus, in contrast to Olson's model, the cost-benefit ratio of the smaller country may be greater than that of the larger country. The results demonstrated conditions that may bring forth international cooperation between large and small countries about public good supplies.

By introducing different preferences into Olson's model, we may find organizations in which one member supplies all of a public good and/or where one member pays almost all costs of increasing the supply of a public good. Indeed, we may even encounter circumstances under which a small country provides more of a public good than a large member. Without information on preference patterns or income effects, it is not possible to say which share should be contributed by each member to any given public good. Statements about one member exploiting another cannot be made without this information. Unfortunately, we rarely possess an operational concept which allows us to allocate cost-shares in public goods provision. Further research should have to be undertaken to investigate the preference patterns of countries as to public goods.

The last part of the research has been dedicated to the assessment of the Rational Actor Model in the area of development cooperation. The evaluation of the aid performance by the DAC donors on the basis of the Rational Actor Approach proved to be less illuminating than most applications of Olson's public goods theory to International Relations made us assume.

It was amply indicated that development aid is an international good containing simultaneously public and private good elements. Moreover, the existence of the different rationales

for foreign aid allocation tended to indicate that an analysis of development aid based upon mere Rational Actor assumptions may contain some misguided inferences. In effect, preferences for the realization of development aid widely varies from donor to donor. The international common interest in development aid is often tied to the pursuit of national interests. The many national benefits that are drawn from the foreign aid disbursements have certainly compromised the public good nature of development aid. Finally, we defined the actual aid effort of a donor as the result of mixed motives, or a synthesis of altruism and self-interest. The Rational Actor Model, however, only deals with aid donors guided by their individual self-interest and makes abstraction of the altruistic rationale for foreign aid allocation, a not totally unimportant motive in development cooperation. Resuming the relevance of a public goods perspective to the area of development cooperation, we are inclined to conclude that the applicability of both the Rational Actor Model and Olson's public goods theory is not totally satisfactory.

The results of the empirical assessment of both Olson's public goods model and Ruggie's joint production scheme indicated a change in the aid performance by the donor countries as regards the aid volume as well as the composition of the aid flows. Both models considered the size of a donor instrumental in explaining the aid performance of donors. However, the inference we drew from the empirical test was that size was no longer an explanatory source of foreign aid behaviour, as both models made us believe.

Therefore, we re-assessed the aid performance of DAC countries in order to explore some possible reasons for the departure from the outcomes predicting an association between size and aid performance. The importance of specific interest of donors, the impact of large donors, the wealth of nations and the 'quality'

of aid have certainly blurred the neat assumptions of the Rational Actor Approach. The inclusion of these factors into the analysis certainly provides a more appropriate picture of the aid performance by DAC donors. It also proves the difficulties inherent to scientific analysis in International Relations.

As a final conclusion we may recall some points of the assessment of the Rational Actor Approach to the area of development cooperation. The abstract nature of the public good concept often thwarts the incorporation of the economic theory of public goods into International Relations, particularly into the area of development cooperation. The problem appears to be the involvement of a large number of different considerations relevant to cooperation in development aid. The ability of academics to separate particular issues, e.g., development cooperation, from ongoing political, military, and economic relations, does not mean that studies in International Relations can easily follow this pattern. The larger the number of issues intertwined, the less likely that individual nation-states will perceive any particular issue as primarily one of public goods. The many different interests involved in the area of development cooperation illustrate this point. In short, there is a rather weak link between the theory of public goods and its applicability to development cooperation.

The public goods problem follows from the assumption of isolated rationality of the units involved. By broadening the logic of collective action to the field of International Relations we transposed the individual-group relationship towards the state-international system relationship, assuming collective rationality. Thus, for the course of the study, we assumed a consistency of choices at the aggregated level of the state in spite of the internal decision-making process within the state.

The Rational Actor Model deals with rational states guided by their individual self-interest. However, the results of the empirical tests seem to indicate that nation-states have become 'irrational' in their foreign aid behaviour. It is certainly true that plain self-interest can not be considered as the only rationale for foreign aid allocation. The most reasonable inference we may draw at this moment is that the aid performance of nation-states can not fully be explained by the economic theory we used : aid donors do not seem to be guided by 'economic reasoning' and the size of a donor does not any longer seem to determine the foreign aid behaviour.

This scientific undertaking clearly illustrates the difficulty of a combined application of the Rational Actor Approach and a public goods perspective to the analysis of the aid performance by the DAC countries. However, attempts must be continued to search for possible applications of economic theory to International Relations, particularly to the area of development cooperation. Further research is also needed to hypothesize about the association of the size of donors and their actual aid performance.

't was zuchten, zoeken, zwerven immer voort
lang duren 't laatste woord
en even lang dan toch
wat groeten aan de zee
op 't einde van een lang verhaal

en 'k moet mijn stem terug volgen
stuivend 't natte schilferzand
tot pletsen zilver plassen
tussen glooien windpatronen
en als avondgroet de volle maan zien wenken
effen tussen witte wolkenvelden

Léonce Bekemans

